21 nu 3 Miss ... advertisements reading matter

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI. CHICAGO, JULY 7, 1888. NO. 1.

ORIGINAL ARTICLES.

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECT.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8-11, 1888.

BY R. HARVEY REED, M.D.,
OF MANSFIELD, OHIO.

In the study of "intestinal obstruction," we shall endeavor to confine ourselves, as far as possible, to the consideration of two general conditions.

1. Pseudo-obstruction.
2. Veracious obstruction.

By pseudo-obstruction of the intestinal tract, we mean a paralytic condition, presenting the symptoms of a real obstruction without any such obstruction existing, either ante-mortem or post-mortem.

By veracious obstruction, we mean a literal obstruction of the intestinal canal capable of verification, either ante-mortem or post-mortem.

To prove that these two general conditions do exist, both *ante-mortem* and *post-mortem*, will be the aim of the author, in this paper, by the collection of a few cases, and so far as possible demonstrating the above propositions by actual specimens.

PSEUDO-OBSTRUCTION.

In November, 1883, I was called to see Mr. M., a strong, muscular, contractor, who had reached about middle age, but had always been, and was at the time he was taken sick, an unusually robust, active fellow. After arriving at his bedside, I learned that three days previous, he was taken suddenly ill with a "severe pain in the right side" as they called it, but which in reality, was in the iliac fossa. I also learned that he had had a physician who diagnosed some "liver trouble."

When I reached him, which was only two or three hours prior to his death, I found him complaining of excruciating pain in the right iliac fossa. Extremities were cold; abdomen very much distended, and tender over the whole lower and right side; stercoraceous vomiting and extreme constipation; bowels had not moved at all subsequent to his illness, notwithstanding repeated efforts with drugs and by enemata.

A careful examination failed to discover any localized enlargement, which, had it existed, would have been difficult of detection, owing to the great distention of the abdomen, and the pain and tenderness.

I did not feel clear in my diagnosis, but ventured to tell the friends that in my opinion the whole difficulty was located at some point in the intestinal tract, near the right iliac fossa, but owing to his rapidly increasing collapse (at the time of my first and only visit), all efforts at relief were certainly useless.

A post-mortem examination was made eight hours after death, in the presence of a number of physicians, of Mansfield, O., which revealed an acute typhlitis with perforation, peritonitis, and death. I also found a very high degree of acute congestion of both lungs, which were almost one mass of blood.

There was no real obstruction of any kind in the intestinal tract, the lumen of the entire bowel being free from one end to the other, notwithstanding he had had all the ordinary symptoms of acute obstruction, followed with perforation and peritonitis of a violent type.

In April, 1885, I was called in counsel on a case, which I reported to this Association at its thirty-seventh annual meeting, under the title of "Some of the Complications of Strangulated Hernia," which aids us in demonstrating the fact that we do occasionaly have pseudo-obstruction, with all the symptoms of true obstruction of the intestinal tract. With your forbearance I will briefly mention this interesting case in that connection.

The case occurred in a young man of 30 years, with a vigorous constitution, and a fully developed muscular system, who had not only had a hydrocele, but also a complete inguinal hernia on the right side; the former I tapped, and the latter was reduced with little or no difficulty. I found, however, that the symptoms of intestinal obstruction continued, with all the horrors of stercoraceous vomiting and complete constipation, which after repeated consultations, led to the opinion that some form of intestinal obstruction existed, and must be relieved by surgical interference, or death would surely result.

My friend, Dr. J. W. Craig, who had been called in council on the case, performed the laparotomy, assisted by myself, his son, Drs. J. H. Craig and George P. Sattler, which revealed the fact that the "ascending colon had been dragged down farther than usual, until the lower end of the vermiform appendix had escaped through the femoral ring and became strangulated at a point where it passed Gimbernat's ligament. When released it was found to be swollen to the size of a man's thumb, and very much discolored."

No obstruction whatever was found to exist in the intestinal tract proper, notwithstanding the persistent vomiting of fæcal matter for four days prior to the operation, and our inability to get a motion from the bowels by either copious enemata or legitimate medication.

The intestines were cleansed with a 1 to 3,000 bichloride solution and returned, and the abdominal wound closed; the patient recovering without a single bad symptom, and has been well as usual ever since, the author having seen him only a few weeks ago. In April, 1887, I was called in council with Dr. Jeffries, of Greenwich, Ohio, in the case of a vigorous young man of 17 years, who was suddenly taken ill about four days before with vomiting and a severe pain in the stomach, with no history of a chill. The attending physician, Dr. Jeffries, reported a pulse of 70, not associated with any fever; patient was given a dose of oil, without any results; said he complained of severe pain in the ileo-cæcal region, with tenderness on pressure, which extended more or less over the entire abdomen; could not lie on his left side; persistent constipation, notwithstanding he was given copious injections of warm water; pulse becoming weak and thready, and pain increasing with abdominal distention. The diagnosis of typhilitis was made, and owing to the alarming symptoms Dr. Sykes and son, of Plymouth, were sent for, who, after examination, confirmed the above diagnosis.

On the afternoon of the fourth day of his illness, the author was sent for, arriving there in the evening, and found the patient vomiting fæcal matter, and in a state of apparent collapse, with all the symptoms of acute intestinal obstruction, with perforation, and peritonitis. After receiving the above brief history, and making a careful physical examination, I formed the opinion that he had an obstruction in the region of the ileo-cæcal valve, and suggested the advisability of an operation for his relief, had the case been seen in time; but that owing to his collapsed condition, I did not think an attempt at surgical relief advisable at the present time, as I thought he could not certainly survive over a few hours at most.

To our surprise, however, he lived through the the night, and the following morning had rallied considerably; pulse was stronger and extremities warmer. He begged piteously for an operation, as did his friends, saying that he couldn't *more* than die, and if it gave him the only chance for recovery, he wanted that chance even if he should die in the attempt.

With no small degree of hesitancy, I prepared for the operation, which I feared would be not only useless under the circumstances, but in all probability fatal. Dr. Jeffries gave him the anæsthetic which he took with little or no trouble. The abdomen was carefully cleansed with a 1:3000 solution of the bichloride of mercury.

An incision was made in the median line, midway between the umbilicus and the pubes, carefully directing up with a grooved director the various layers until we reached the peritoneum.

During this period I observed the pulse at times becoming irregular, and the breathing spasmodic, notwithstanding he had been given stimulants and digitalis by hypodermic injections prior to the operation; yet I determined to go on, as I was still firmly of the belief that what I had commenced as an operation would end as a post-mortem. No sooner had I opened the peritoneum, than he collapsed, a few gasps, a slight tremor of the pulse, and the post-mortem was at hand.

Having already arranged for that with his friends, I proceeded at once with the autopsy, which revealed extensive peritonitis with immense exudations of lymph, which had glued the bowels together almost their entire length, and at the same time, pasted them firmly to the peritoneum. A diligent search and careful examination failed to discover the least obstruction to the intestinal tract, the lumen of the bowel being free and open from one end to the other.

In the vermiform appendix, however, was found a calculus about the size of a hazel-nut, in which was a nucleus which I am inclined to believe is a small gall-stone, around which the calcareous laminæ have gathered until the concretion became so large, and produced so much irritation as to ulcerate through the appendix, and allow extravasation into the peritoneal cavity with all its fatal results.

You will observe by examining the specimen, which I shall pass around, that there is a distinct nucleus, and from the laminated character of the calculus we are inclined to the opinion that it was of slow formation. By examining the vermiform appendix and the lower end of the cæcum, which I will also pass around for examination, you will observe the appendix is enlarged to more than ten times its normal size. The bulged appearance just below the end of the cæcum is where I found the calculus imbedded, while a little lower down, you will observe the small opening into the peritoneal cavity. The cæcum, ileo-cæcal valve, colon, and small intestines, were all normal with the exception of the inflammatory products above referred to.

REMARKS.—In each of the above cases we had all the ordinary symptoms of intestinal obstruction, such as a sudden attack with localized pain, constipation with a desire to go to stool, which was followed with no results; stercoraceous vomiting, tympanitis, and in the two cases which were not relieved by surgical interference, collapse, and death, and yet in not a single case was there any real obstruction existing in the intestinal tract proper.

Morris, in Vol. V of the "International Encyclopædia of Surgery," page 993, refers to a few cases of foreign bodies in the appendix vermiformis, and speaks of the symptoms "similating hernia" and "being suggestive of intestinal obstruction," which, to a certain extent, confirms the proposition we have taken, that we do have pseudo-intestinal obstruction, or, rather we have affections of the vermiform appendix, giving rise to a series of symptoms so clearly allied to those of true obstruction of the intestines, that it is with great difficulty, if at all, we are able to diagnosticate during life, without an exploratory incision into the abdominal cavity, between the true and false obstruction occurring along the intestinal tract.

In this class of cases we undoubtedly have a localized paralysis of the muscular walls of the intestine arresting the peristaltic action of the bowel, and thus forming "a block" as it were, to the free movement of its contents, which for the time being, acts as an obstruction even in cases in which the intestine is only partially filled with fæcal matter, the walls of which lose their elasticity and collapse, and thus we can account for the stercoraceous vomiting occurring in these cases, as well as the extreme constipation.

The difficulty of diagnosticating between these cases, and those of complete veracious obstruction is at once apparent. In both there are localized pain and tenderness; in both, stercoraceous vomiting; in both, extreme constipation; in both you may have peritonitis with collapse and death.

In pseudo-obstruction, however, we usually find the symptoms of inflammation preceding those of obstruction, while in veracious obstruction you usually have the symptoms of obstruction preceding those of inflammation.

In pseudo obstruction, we usually find localized pain without any distinct tumor, whilst in veracious obstruction, we usually find a distinct tumor in addition to the localized pain.

If the intestine is inflated by hydrogen gas as devised by Prof. Senn,[1] of Milwaukee, in the pseudo form of obstruction, there will be no difficulty in obtaining a free passage through the entire bowel, and obtain the gas from the stomach by means of a stomach tube; whilst in complete veracious obstruction this will not only be impossible, but the intestine will be found to inflate to the point of obstruction and no farther. If, on the other hand, we have pseudo-obstruction, the result of a peritonitis from perforation, this most admirable method of gaseous inflation, devised by Prof. Senn, will at once enable us to diagnosticate this fact.

By the use of the hydrogen gas *per rectum*, it will be found that by puncturing the abdominal walls with an exploring trocar, being exceedingly careful not to puncture the bowel, that if there is a perforation of the bowel, the gas will escape through the trocar, and be easily ignited, which would not be the case if there is no perforation.[1]

[1] The particulars as to this method of diagnosis have been kindly given me by Prof. Senn, of Milwaukee, who will furnish this Association all the details of his method of diagnosis in perforation of the bowel in a paper already prepared for this Section.

VERACIOUS OBSTRUCTION.

The frequency of true obstruction of the intestinal tract, and the dangers it subjects its victims to, are of such grave importance as to demand of the surgeon the most careful study of this vitally important question. That these obstructions, of whatever class, are of a mechanical nature is without question, and that they can be relieved by proper surgical assistance in a large majority of cases if taken in time, is also just as true.

It is to be lamented that we still have physicians of unquestioned skill who advocate the old opium and purgative plan of expectant treatment of these obstructions, and discourage the use of the knife except as the last resort, when the patient is exhausted by days of excruciating pain, or on the verge of fatal collapse from purulent peritonitis, or dying from the shock and inflammation incident to a perforation of the bowel, and then they condemn operative interference as useless and barbarous because it fails to save the life of one who is practically moribund before the surgeon is allowed to operate. It is true they have a case now and then when there is complete intestinal obstruction in which nature has stepped in and did the surgery for them and saved their patient.

In this connection I desire to report a case that not only shows what nature *will* do, but which at the same time demonstrates the principles we shall advocate for the prompt repair of intestinal obstruction, with possibly a few modifications on nature's original plan.

About the middle of May, 1886, the author was called in council with Dr. George P. Sattler, of Pavonia, Ohio, in the case of Mrs. H., who had been suffering from intestinal obstruction for six days prior to my visit. From the Doctor and the family I learned that on the night of the 12th of May she was seized with "pain in the epigastric and umbilical regions," which was of a paroxysmal character, which steadily increased in severity, and was soon followed with vomiting, without any motion of the bowels.

The patient informed me she had been engaged the day before putting up an ash-leach, and had

been lifting bucketfuls of ashes nearly as high as her head, but felt no inconvenience from it, excepting when she was in the act of lifting one bucketfull she felt a little pain in her side, as she expressed it, and supposed she had wrenched herself, but paid no further attention to it and went on with her work.

Dr. Sattler informed me that "there was at no time any localized tenderness, pain, or swelling," but that on the fourth day "general peritonitis" had set in, which "was accompanied by stercoraceous vomiting and occlusion of the bowels," which he located "somewhere in the lower half of the ileum."

After a careful examination of the case I advised an operation; although at my visit I found so much tenderness and tympanites that I could not locate the point of obstruction, yet I felt morally certain it existed, and considered an operation the right thing to do. There being some hesitancy on the part of the friends, as well as the Doctor, as to an operation, we left with the understanding that they would make another effort at moving the bowels and if that failed they would consider the advisability of an operation.

After diligent efforts at removing the obstruction for three days more without success, they called Dr. J. W. Craig, of Mansfield, O., to see her in consultation with the family physician, who advised making "another effort to overcome the obstruction by medication, and if that did not have the desired effect to operate within twenty-four hours."

A few hours later, however, some fæcal matter was passed, per rectum, "during a violent fit of vomiting," and "from that time forward her condition gradually improved." "On the 20th day of her illness, while in the act of defecation, she passed a section of the ileum about 6 or 8 inches in length," which "when first seen was still telescoped."

I am indebted to Dr. Sattler for this specimen, which I have the pleasure of showing you to-day, as well as the general history and report of this interesting case. You will observe that a portion of the mesentery was passed with the intestine, which is attached to the latter in numerous places by bands of adhesions, while the ends of the intestine are oblique and present a ragged and tattered appearance.

The patient gradually improved and is still living, but never regained her usual degree of health.

In June, of the same year, Dr. Sattler had a similar case of intestinal obstruction in a male, aged 65 years, who, after twenty days of intense suffering with stercoraceous vomiting and constipation, was relieved by passing a portion of the bowel, which came away in shreds, one of which the Doctor procured and has kindly given me for exhibition at this meeting, but which has become so contracted from being in alcohol, which finally evaporated and allowed the specimen to dry up in the manner you see it at present.

In these two cases of veracious obstruction of the intestinal tract we have an example of what nature will occasionally do when not relieved by art, and at the same time we have a practical demonstration of the principles of Prof. Senn's method of uniting the ends of an intestine by the rubber-ring method.

In these cases the intussusceptum undoubtedly acted the part of the rubber ring to the intussuscipiens by becoming swollen, and in this way holding the two serous surfaces together until union took place, when the lower portion of the intussusceptum became gangrenous and sloughed off and was passed just as the rubber ring is—*per rectum*.

It is true there should be a liberal degree of conservatism practiced in all these cases before laparotomy is resorted to, and all possible complications carefully studied and their importance duly considered. I was forcibly impressed with this idea of conservatism a few days ago while assisting in a post-mortem examination on an old man who had died of carcinoma of the liver, which during his lifetime had had marked symptoms of obstruction of the bowel.

His attending physician, Dr. J. S. Stewart, of Ontario, O., informed me he had diagnosticated obstruction located on the right side at the juncture of the ascending and transverse colon, some months prior to his death which he was inclined to think came from impaction of the fæces, and which, after a few days, was relieved, although he frequently complained of pain in that region.

The post-mortem examination revealed a cancerous liver, which had become so enlarged as to reach almost to the iliac fossa on the right side, and more than half way to the iliac fossa on the left side, pushing before it the transverse colon, producing an U-shaped condition of the colon, with an acute angle on the right side and a subacute angle on the left side. On the right side that portion of the transverse colon which was pushed down parallel to the ascending colon was completely adherent to the latter for about 8 inches, making in all 16 inches. It was at the acute angle where the temporary obstruction was lodged, no doubt producing the inflammation and adhesion found at the autopsy.

I recognize in this case, which at the time of the obstruction was not suspected of having a cancerous liver, a mechanical condition producing obstruction in which little benefit could occur from operative interference, as it would have required the switching off of at least 16 to 18 inches of the colon by Prof. Senn's decalcified bone plate operation, which in a patient of over 70 years of age, with more or less of a devitalized condition, would have certainly proved fatal, saying nothing of the enlargement of the liver.

On the other hand I have a specimen I obtained at a post-mortem examination I held on Mr. E. P., age 72 years, in which I was assisted by Dr. J. Harvey Craig, of Mansfield, O., which you will observe is an old, irreducible inguinal hernia, in which the sac has become enormously thickened and attached in many places to the loop of intestine, which is so constructed at the neck of the sac as to have materially impaired the circulation of the contents of the intestine, which at different times threatened obstruction, but which happily passed off without any serious results.

Here is a case in which the ordinary operation for the radical cure of hernia would have been attended with great danger if it had not proved a complete failure altogether, owing to the numerous adhesions; yet it would have been a suitable case for the Senn decalcified bone-plate operation, and thus have sidetracked the loop of intestine contained in the hernial sac, and allowed it to have undergone physiological atrophy. Permit me to say, that the subject from which this specimen was taken died from a disease in no way connected with this old hernia.

CONCLUSIONS.

From a study of these few cases that have come under my personal observation, in their relation to intestinal obstruction, I have come to the following conclusions:

A.—1. That we do have pseudo-obstruction of the intestinal tract in which all the symptoms of true intestinal obstruction exist, without any real obstruction being present.

2. That all these cases will result fatally if not relieved.

3. That surgical interference is not only the rational, but the safest and surest means of relief.

B.—1. That in veracious obstruction of the intestinal tract we may have spontaneous recovery in rare instances, attended with painful, prolonged, and dangerous illness.

2. That there are occasionally circumstances occurring where there is mechanical obstruction with certain complications in which operative interference would be useless, and not only hazard the life of the patient, but undoubtly shorten his days.

3. That there are mechanical obstructions of the intestinal tract that cannot be relieved except by surgical interference.

The author would recommend an operation at the earliest possible moment after the diagnosis of intestinal obstruction is made, in the firm belief that delays are not only dangerous, but hazardous, in the majority of cases.

As to the methods of operation, I would recommend the rubber ring, modification of Jobart's method, devised by Prof Senn, of Milwaukee, as the safest where it is necessary to make a resection or excision of a portion of the intestinal tract. And where an excision is not necessary (and under certain conditions where excision is necessary) the decalcified bone-plate method as devised by Prof. Senn, is advised, by which a portion of the intestine can be "switched off," as it were, by opening a new channel between the upper and lower portion of the bowel and thus allow the "sidetracked" portion of the intestine to atrophy from disuse, while the contents of the bowel proceeds on its way through the artificial opening.

In purulent peritonitis, with pseudo-obstruction of the bowel, the opening and washing out of the abdominal cavity is unquestionably the proper thing to do, while in the same condition from veracious obstruction it is imperative in connection with the removal of the obstruction proper.

In all operations in the abdominal cavity we would recommend the strictest antiseptic precautions, which combined with the earliest operative interference possible in cases of intestinal obstruction, and the improved methods of operating, as devised by Prof. Senn, we are of the firm conviction that the mortality in this class of cases can be very decidedly diminished.

May 3, 1888.

THE NERVOUS RECTUM.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY WILLIAM GOODELL, A.M., M.D.,

PROFESSOR OF GYNÆOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

Hysteria is closely allied to insanity, and as the latter frequently manifests itself by a single delusion, while the mind remains clear on all other subjects; so hysteria often exhibits itself chiefly by some localized disorder. It then explodes externally and billets itself on certain muscles or on certain sets of muscles, forming, as it were, a sort of muscular insanity. The mind is sane, the organic body is sound, the individual, as a whole, is above reproach, and yet these muscles will behave as if they were bereft of reason. Few muscles are exempt from the attacks of hysteria, and thus are formed hysterical paresis and anæsthesia, hysterical aches and jerks, and those hysterical grimaces of expression or of locomotion with which all of us are familiar.

The muscles most liable to become hysterical are, perhaps, the circular ones, viz., the sphincters of outlets or inlets, and while the insanity, so to speak, is more localized, the sufferings are perhaps greater. Thus by a lack of nerve coördination in single muscles of this kind come irritable bladder, painful coition, asthma or dyspnœa, loss of voice, vomiting or regurgitation of food, difficulty in swallowing, dysmenorrhœa and palpitations of the heart. Much might be said on all these subjects, for the field is a wide one; but I

shall restrict myself to-day to the consideration of the hysterical rectum.

In this form of hysteria there are usually present, in my experience, some one of the protean symptoms of general nerve prostration, such as spineaches and backaches, sore ovaries, weariness, wakefulness and nervousness. But the chief suffering, or the most exacting symptom, is referred to some portion of the rectal tract, leading the physician to suppose that he is dealing with some coarse or traumatic lesion. When leading nerve-symptoms are absent it is not always easy to unmask these nerve counterfeits of rectal disease. But the careful observer will note an irregularity of pain in the hysterical affection, an indescribable affectation of suffering, and a lack of consistency in the behavior of the symptoms.

In one form of hysteria localized in the rectum, spasm of the sphincter takes place, and the nerves are so acutely sensitive that the symptoms mimic those of an anal fissure. The act of defecation then gives great suffering, followed by a painful throbbing which may last for hours. Patients thus afflicted so dread the suffering that they school themselves into habits of costiveness, and often become victims to opium eating. Sometimes the site of the rectal pain lies higher up than the sphincter muscle, and is irrespective of the act of defecation. It then is liable to show periodicity in its character, coming on at regular hours of the day, probably from the periodicity with which the accumulation of feces in the lower bowel takes place. Another form is a throbbing and pulsating pain while the rectum is loaded, and a sickening pain during defecation. These two last forms of rectal suffering are often, although not always, dependent on prolapsed and tender ovaries, over which the hardened feces grate. In one of my cases an opium-eater, reduced to the last degree of weakness and emaciation, being in fact merely a bundle of skin and bones, rectal enemata, or the presence merely of feces, kindled up sexual throbs of the most painful and exhausting character, which thrilled through the whole body for hours at a time. She was cured by the removal of the tubes and of the ovaries, which were diseased. A neurotic coccyx, causing coccygodynia, will evoke some of the foregoing symptoms; but the diagnosis can be readily made by introducing the index finger into the anus and by placing the thumb on the coccyx, where that bone can be grasped between them and moved to and fro.

All the preceding forms of the nervous rectum are associated with pain; but there are sheer hysterical ones, which are by no means uncommon, and in which the rectum behaves as if it had wholly lost its wits. In some women the sphincter ani becomes so strong by unnatural exercise, and is so powerfully contracted by tonic spasm, that despite the most active cathartic, this last muscular barrier cannot be overcome unless an enema be given, or unless the finger be passed into the vagina, hooked over the sphincter and pulled strongly downwards. This adds to the *vis a tergo* and everts the anus. One of my patients who has lately had a relapse, although her sphincter ani has been cut by another surgeon and overstretched by myself, describes the spasm of this muscle as a "ring of iron," through which she can barely insert the smallest nozzle of a syringe. I have repeatedly met with cases in which stricture of the rectum was so exactly counterfeited that the feces were expelled either in the form of thin flat ribbons, or in small round pellets like the dung of sheep or of goats.

In many women the act of defecation is not accompanied by pain, or by any local inconvenience whatever, the function being perfectly natural. Yet there will follow it great exhaustion, sometimes amounting in degree to a collapse, from which it will take hours for the patient to recover. The pranks which a nervous rectum will sometimes play are amusing and yet very annoying. I know of a lady who is actually kept a close prisoner by an apparently very jealous rectum. At home and in indoor dress, this lady is well and at ease. But if she dresses to go out, her rectum begins to grumble audibly, and, just as soon as her hat is put on, it starts up painful tenesmus and repeated stools, which do not cease until she uncovers her head and resumes her household duties. One lady could not get her bowels moved unless she stood erect, and the inconvenience of such a posture was of course very great. Being practically bed-ridden from nerve-prostration and from neuralgic and prolapsed ovaries, she was sent to me to have oöphorectomy performed on her. But by massage, electricity and rest she became well and is now, as she lately wrote, able to dance all night and take a walk of three miles the next day. A lady, who was under my care for nerve prostration, could not receive a letter from her husband without having so urgent desire to go to stool, that she had to postpone reading it until she had first responded to the rectal call.

One of my patients was compelled to go to the water-closet whenever a visitor was announced. Another one was affected in like manner upon any emotional excitement. For instance, when Garfield died, the report reached our large cities shortly after midnight, and was cried out in the streets by the policemen and watchmen on duty at that hour. The news thus conveyed awakened my patient out of a sound sleep, with the result that she had an involuntary evacuation and soiled her bed. In some cases the rectum is so irritable that urgent tenesmus is at once aroused, as soon as the feces descend low enough to enter it. This causes repeated and sudden evacuations, which are usually painful, and always unseasonable.

These cases cannot use enemata of any kind, for either the entrance of the nozzle gives too much pain to be borne, or the fluid, as fast as it is injected is forced out along the sides of the nozzle. In other cases the rectum is too emotional, and the lady is obliged to forego all social pleasures on account of rectal tenesmus produced by any kind of excitement, which either causes the escape of wind or creates an uncontrollable desire to evacuate the bowels. These annoyances make them very morbid on the subject, and they think and talk of hardly anything else.

There is yet another form of disease, which I think may be classified under the general heading of nervous rectum, although its pathology is by no means yet fully determined. I refer to pellicular colitis, or pseudo-membranous enteritis, as it is usually termed, in which mucous casts of the lower bowel are discharged with much tenesmus and abdominal pain, either by themselves or in the regular evacuations. I have repeatedly met with this form of intestinal trouble, and I have so invariably found it in hypochondriacal or in hysterical patients that I am disposed to look upon it as a sheer neurosis. That is to say, it is as much a nervous affection as shingles, pruritus, urticaria and other eruptions or cutaneous manifestations of disordered innervation. Patients who have this affection are perpetually talking about it, perpetually examining their evacuations, and are prone to search for and save the membranous casts for the inspection of their friends or of their physician. Nor have I ever seen this disease among the ignorant and the unrefined. It is, in my experience, a disease peculiar to well educated and emotional women of high intelligence, who have some degree of nerve-prostration.

The treatment of a nervous rectum depends largely upon the general condition of the patient. If she have nerve-prostration, as she usually will, failure will attend every effort to cure the rectal disorder, unless the former is successfully treated. The very best general treatment for this condition of the nervous system is that devised by Weir Mitchell, which I have described in detail in the last (3rd) edition of my "Lessons in Gynæcology," under the heading of "The Nerve-Counterfeits of Uterine Disease." It consists of prolonged rest in bed, of seclusion from friends, of nutrition, of massage and of electricity. The therapeutic advantages of the first three agents are self-evident, and they need no explanation. But the last two are equally important. They pleasantly stimulate into action the vaso-motor nerves, and the terminal filaments of cutaneous nerves. They also exercise the muscles without volition on the part of the patient, and, therefore, without expenditure of nerve force. Now this is a very important item in the treatment, for all voluntary muscle-work is nerve-work, and the nerve-capital in these cases is too small to be drawn upon. Percussion, made by quick strokes with the ulnar margin of the palm of the hand, or with a wet towel, or with two rubber balls mounted on whalebone stems, temporarily stuns the nerves; and these surprises effects molecular changes, by which lax fibre and tissues of loose consistency are strengthened. Again, both massage and electricity raise the body temperature, stimulate the nervous system, promote the secretions and increase the peristaltic action of the bowels. Also, the new and sharp impressions of electricity intrude upon and break up the mental attitude of morbid concentration on the pseudo-neuralgic pains of the rectum, and on its embarrassing eccentricities.

Thus these two agents not only act as antidotes to the evils which come of prolonged rest, but they meet several important indications. Further, as in these cases of nerve prostration there is disturbed circulation as well as enfeebled and disturbed innervation, it follows that, when a pathological process is set up by an increased flux of blood or flux of nerve fluid to an organ, whatever tends to lessen the amount of this overflow tends to restore that organ to health. Now, both electricity and massage increase surface circulation in the large vascular district of the skin; they flush its shallow arterioles. Again, by irritation of vaso-motor nerves, they also produce reflex changes in the circulation and in the innervation of deeper parts. But increased capacity in one vascular district causes lessened capacity in another. Hence the flux of blood and of nerve fluid is diverted from the congested organ, viz.: the rectum, and the amount of its circulation is lessened to a great degree. In all my cases, the interrupted current was most commonly used, the galvanic current being reserved for stubborn and deep-seated pelvic pains. It is interesting to watch how very surely, under this treatment, the rectal pain or other nerve pain is slowly extinguished.

But, in addition to the foregoing constitutional treatment, the rectal trouble itself needs supervision and special attention. When the patient complains of great exhaustion after a movement of the bowels, it is well to manage it so as to get the bowels opened just before bedtime. This can be accomplished either by an enema given an hour before bedtime, or by laxatives taken late in the day. In this way, the exhaustion being repaired by sleep and by a whole night's rest, the patient wakes up the next morning refreshed, and keeps refreshed until evening. A full dose of a bromide, or a stimulant, taken shortly before the bowels act, will also answer very well. Sometimes the exhaustion is best met by the use of the bed-pan, by which the recumbent posture is maintained, and the equable circulation of the blood is not interfered with. Of course, as the patient im-

proves in health and strength, this symptom gradually disappears. When the nerve symptoms counterfeit those of anal fissure, they are to be treated in precisely the same way as the latter. Suppositories of iodoform or of antipyrin will be found of benefit; but, these failing, the best treatment is that of overstretching the sphincter ani. This operation is usually followed by a permanent cure; but sometimes, after a few months' absence, the pain will return and the muscle will again have to be stretched. These relapses do not occur unless the patient's general health has not been greatly benefited or it has deteriorated. I have occasionally resorted to an analogous operation, whenever any rectal pain was complained of, or when the spasm of the sphincter ani was so strong as to make a movement of the bowels difficult. In these cases I have usually found the sphincter muscle so well developed by its unnatural exercise, that all my strength was needed to overcome its resistance.

With regard to pellicular colitis, or pseudo-membranous enteritis, I know nothing that will cure it, unless the general neurosis or nerve prostration is overcome. There are, however, local remedies which soothe the rectum, mitigate the suffering and lessen the amount of the secretion of false membrane. Suppositories of iodoform, of belladonna and antipyrin generally act well. Injections of broth, of hot water, of thin starch, of flaxseed tea, and of weak solutions of potassium chlorate or of witch hazel, will do good. I have obtained benefit by a clyster of 2 or 3 ozs. of undiluted limewater, or of the same quantity of Carrom oil. The painful tenesmus often accompanying this disease can generally be overcome by stretching the sphincter muscle. Of course opium soothes above all other drugs, and the temptation to use it is great. But it should be scrupulously avoided, as all such cases are liable to become opium eaters.

The best medicines for a nervous rectum are not those which regard especially the local trouble, but those which, being constitutional in their action, reach the general nerve prostration. My favorite pill is one made by Bullock & Crenshaw, and labelled by them Pil. Sumbul Comp. I prescribe many thousands every year. It consists of one-fortieth of a grain of arsenious acid, one grain each of dried iron sulphate and extract of sumbul, and two grains of asafœtida. Since it contains asafœtida, it should be sugar-coated. For the first few days the patient tastes this drug, but usually she very soon ceases to regard it. The chalybeate pill, or Blaud's pill, so highly extolled by Niemeyer, is an excellent method of conveying large quantities of iron into the system. During the first three days, one pill is to be taken after each meal. On the fourth day four pills are taken, viz.: two after breakfast, one after dinner, and one after supper. On the fifth day, five pills; on the sixth day, six—that is to say, two pills after each meal. For three days more, six pills are taken daily; then the dose is to be increased by one pill daily, until three pills are taken after each meal. On this final dose the patient is kept for three or four weeks, or even longer, and then the number of pills is lessened by one every day until one pill is reached, when it is discontinued. In stubborn cases I have occasionally run up the dose to five pills thrice daily, and have seen no other bad effects from it than a tendency to constipation and a feeling of fulness in the head.

Two other pills have done me such good service that I will mention them: The one is called "the pill of three valerianates," and it contains one grain each of the valerianates of zinc, iron and quinia. The other pill consists of one-eighth of a grain of the chloride of gold and sodium, two grains of zinc valerianate and one grain of extract of hyoscyamus. These pills should be given whenever the nervous symptoms predominate largely over all others, and when the general health is otherwise in a fair condition.

Whenever malaria complicates the case I am very fond of giving a mixture containing one part of Fowler's solution of arsenic to nine of the syrup of iodide of iron. As a chemical decomposition is liable to take place, forming an arseniate of iron which precipitates, this mixture should be well shaken before it is taken. Of this ten drops, in a sufficient quantity of water, are given after each meal on the first day; eleven drops after each meal on the second day; twelve drops after each meal on the third day; and so on until, on the twentieth day, thirty drops after each meal are reached. The medicine is now kept up for a week or two at thirty drops after each meal. The dose is then lessened by one drop, in precisely the same way that it was increased, until ten drops are again reached, when the medicine is discontinued. For strict uniformity in the size of the drops, a dropper should be used. The only objection to this mixture is its liability to precipitate, and also to discolor the teeth temporarily, but it does not injure them like the tincture of ferric chloride.

Of course the bromides are very often needed, for, apart from their soothing properties, they seem to divert the blood from the pelvic organs and to lessen congestion. If continued for any length of time, it is well to combine them with a bitter tonic, such as the compound tincture of gentian. This serves to antagonize their depressing effect.

For sudden paroxysms of rectal pain, or for other nervous outbreaks associated with a hysterical rectum, I know of nothing so effectual as antipyrin in five- or ten-grain doses, or the hydrobromate of hyoscin in doses of one-one hundred and twenty-eighth of a grain—viz.: grain $\frac{1}{128}$. They should be given by the mouth every two hours until either the pain is relieved, or the characteristic symptoms of each drug are exhibited.

Whenever these sufferers are so situated that they cannot afford time for the rest-treatment, or the expense of it, I compromise the matter by making them go alone into a darkened room, and take a rest of one or two hours every day. This repose of body and of mind should be absolute, and it must therefore be so timed as to be free from all interruption.

A CASE OF TYPHLITIS, WITH DOUBLE PERFORATION OF THE CÆCUM, AND PERITONITIS,

IN WHICH LAPAROTOMY AND SUTURE OF THE GUT WERE FOLLOWED BY RECOVERY.

Read in the Section on Surgery at Thirty-ninth Annual Meeting of the American Medical Asssociation, May, 1888.

BY L. S. McMURTRY, A.M., M.D.,
OF DANVILLE, KY.
FORMERLY PROFESSOR OF ANATOMY IN THE KENTUCKY SCHOOL OF MEDICINE, ETC.

On the evening of Thursday, January 26, 1888, I was summoned by telegraph to Somerset, Ky., to meet Drs. George Perkins and I. S. Warren, of that town, in consultation. Going by a night train, I joined Drs. Perkins, Warren, and Owens, Sr., at the bedside of the patient at 8 o'clock on the morning of the following day, the 27th.

The patient was a well-known young physician, Dr. J. L. Owens, of Somerset, and I reproduce the history of his illness up to the time of my first visit in Dr. Perkins' own words: "For several months prior to the illness of Dr. J. L. Owens he had been subject to occasional attacks of colic. These attacks were not very severe, would occur without warning, were of short duration, and were frequently attended with nausea and vomiting. They were attributed to indigestion. On January 10 I was first called to see him, and found him suffering intensely with pain referred to the right iliac region. He had already taken ½-gr. of morphia hypodermatically without relief, and his wife was, by his direction, administering chloroform when I entered the room. The severity of the pain, with its locality, excited my suspicions of renal colic, which opinion was confirmed by Drs. Warren and Owens, Sr., who joined me soon after my arrival. This opinion was still further confirmed later by intense reflex pain in the head of the penis.[1] By the liberal use of morphia, aided with occasional inhalation of chloroform, relief was secured.

"For three or four days following, an occasional dose of morphia sufficed to keep the patient comfortable. As soon as possible the morphia was discontinued, and laxatives were administered for relief of the constipation which existed. On January 18 there was increased soreness in the iliac region. On January 23 I first detected by the touch a slight induration there. This induration was almond-shaped and in the line of the ureter. Immediately over it could be elicited dulness on percussion, but not flatness. A diagnosis of renal colic having been entertained, this was supposed to be impaction of the ureter. This induration continued with gradual enlargement, until it became an oblong sausage-shaped tumor in the right iliac fossa. Pain required occasional doses of morphia, and there was moderate febrile movement. On the evening of the 26th hæmorrhage from the bowels began, the patient passing about 32 ozs. of blood. Hiccough was added to the other symptoms, which, with increased frequency of the pulse, tympanites and serous vomiting, established the diagnosis of cæcal or pericæcal inflammation. On the morning of the 27th increased frequency of the pulse, cold extremities and perspiration were interpreted as symptoms of perforation and impending collapse. In solving the problem of intra-abdominal disease in this case I think we were greatly aided by the sparing administration of opium, thereby avoiding the obscuration of symptoms."

When I saw the patient on Friday morning, the 27th, the pulse was small, the surface bathed in perspiration, with frequent vomiting of green, serous fluid, characteristic of peritonitis, and bloody stools as described by Dr. Perkins. The tumor already described was distinct in outline, and readily recognized as the caput coli. In our consultation I recommended immediate section of the abdomen, which was readily acceded to by Drs. Perkins, Warren, and Owens, Sr. Our decision was communicated to the patient, who, being a competent physician, cognizant of his danger and appreciative of the advantages offered by prompt surgical interference in abdominal disease, consented without hesitation. Immediate preparations were begun for the operation. We believed we had to deal with a perforation of the appendix and consequent septic peritonitis.

At 2 o'clock Dr. Perkins anæsthetized the patient and, with the assistance of Dr. Warren, I proceeded to operate, observing thorough antiseptic precautions. The incision was 3½ inches in length, made directly over the tumor, beginning on a line about 2 inches to the right of the umbilicus and continued obliquely in the direction of the pubes; It was afterward extended ½-inch toward the pubes. The superficial layers of the parietal tissues were healthy, but the deeper layers were heavily infiltrated. The parietal peritoneum and that covering the caput coli and adjacent coils of small intestine were thickened, highly injected, and exhibited flakes of recent lymph. The peritonitis was limited, but bore evidences of being recent, severe and spreading. The cæcum was

[1] Symptoms simulating those of renal colic have been frequently observed in cases of perityphlitis. See article by J. W. Elliott on "Perforative Appendicitis," in Boston Medical and Surgical Journal, Jan. 19, 1888, p. 92.

brought up through the edges of the incision and surrounded with a towel wrung out of hot carbolized water. The intestines were retained by warm sponges pressed within the wound. The vermiform appendix was found to be normal. Upon the anterior and external surfaces of the cæcum were two gangrenous perforations, one being somewhat larger than a twenty-five cent piece, the other a little larger than a ten-cent piece. These perforations were black and of well-defined circular shape. The larger perforation was complete, and allowed free exudation from within the gut. The smaller one was scarcely complete, but the tissues were rotten, and upon slight pressure allowed my little finger to slip into the cavity of the gut. The lesions were typically those of perforative peritonitis. With the scissors I trimmed off the edges of the perforations, removing the gangrenous tissue and converting them from circular to elliptical shape. The openings were then closed with silk sutures applied after Lembert's method, five sutures for the larger and three for the smaller opening. The tissues of the gut were thickened with inflammatory exudation. The sutures passed beneath the muscular coat but did not penetrate the mucous membrane. The toilette was made with scrupulous care. The diseased parts and the entire iliac fossa were carefully cleansed with warm carbolized solution (1 to 40), and a large-sized rubber drainage-tube placed deep in the iliac fossa. The wound was closed with silk sutures, dusted with iodoform, and dressed with antiseptic gauze.

Immediate improvement followed the operation. Neither vomiting nor intestinal hæmorrhage recurred. The after-treatment was conducted in accordance with the methods commended by recent clinical experience in cases of abdominal section. Within a few hours after the operation the pulse and temperature fell to almost the normal standard, and so remained, with the exception of a few hours on the third day when the pulse and temperature suddenly ran up in consequence of gastric distension. Drs. Perkins and Warren being present, promptly administered a Seidlitz powder, which was followed by a complete evacuation of the bowels with prompt relief of the unfavorable symptoms. With the exception of this interruption of a few hours, the pulse and temperature remained under 100 after the operation. The bowels were moved, as stated, on the third day, and were kept soluble throughout. Opium was used very sparingly, and when absolutely required it was given in small doses hypodermically. The drainage-tube was removed piece by piece, and was entirely withdrawn on the fourteenth day. The drainage was encouraged and facilitated throughout the after-treatment by suction of the tube, made by means of a small glass syringe, to which the tube could be closely fitted. The dietary, of course, was limited to fluids and semi-solid foods. The patient rapidly regained his strength, and is now completely restored to health and his professional work.[1] It is only just to my colleagues, Drs. Perkins and Warren, that due recognition should be made of their skill in the diagnosis of the case, their valued aid during the operation, and their services so faithfully rendered during the after-treatment.

The treatment of non-traumatic perforation of the intestine and consequent peritonitis by abdominal section is of very recent date. The first operation of this kind was reported in 1883 by Miculicz, for perforation of the vermiform appendix, with a fatal result.[2] In June of last year (1887) Weir was able to collect only fifteen cases in which laparotomy had been done for perforation of the intestines not due to traumatic causes. Of this number nine were cases of disease of the appendix, and all save one resulted fatally. In one no perforation was found, the peritoneum was cleansed and the patient recovered. In another an abscess was found, but no perforation, the patient recovering. To Weir's collected list should be added a successful case of abdominal section for perforation of the appendix done by Dr. Thomas G. Morton, of Philadelphia, reported by Dr. Frank Woodbury to the College of Physicians of Philadelphia, June 1, 1887; another successful case reported by Dr. J. W. Elliott in the *Boston Med. and Surg. Jour.*, of Jan. 26, 1888; and also another successful case of perforation of the appendix treated by abdominal section by Dr. Henry B. Sands, of New York, reported in the *N. Y. Medical Jour.* of February 25, making a total of twelve cases with four recoveries. Only one case of perforation of the cæcum treated by laparotomy has been recorded. This case was reported by Regnier in 1886.[3] The patient was a male, æt. 16, and the symptoms were those of intestinal obstruction and peritonitis. Laparotomy was done on the fifth day, and the patient died seven hours afterward. The perforation of the cæcum was discovered at the autopsy. From this it will be seen that I have the honor to report the first successful case of abdominal section for non-traumatic perforation of the cæcum. Perforations of the cæcum are extremely rare in comparison with those of the appendix.

Under the head of typhlitis and perityphlitis all inflammatory processes in the iliac fossa involving the cæcum or vermiform appendix are included. In classifying these affections several varieties have been described by surgical writers, but for clinical purposes it is only necessary to describe them as extraperitoneal and intraperitoneal. To differentiate these inflammatory conditions is at times difficult, often impossible. When, however, the local and general symptoms of peritonitis su-

[1] The patient was here presented to the Section.
[2] Weir. N. Y. Medical Record, June 11, 1887, p. 654.
[3] Treatment Chirurgicale de la Peritonite. Truc. 1886, p. 57.

pervene, with the fearful evidences of perforation, as in the case here reported, the differentiation is made without great difficulty. In the extraperitoneal, perityphlitis proper, the inflammatory process has its origin in the cæcum or its appendix. Adhesions are formed between the opposing peritoneal surfaces, thus shutting off the general peritoneal cavity.[4] Pus forms in the retroperitoneal connective tissue and, following the connective tissue plane, dissects up the anterior reflection of the peritoneum to appear with tumefaction and fluctuation above Poupart's ligament. A distinction must be observed between this class of cases and those of general septic peritonitis. In evacuating the extraperitoneal abscess the dissection must be carefully conducted with a view to avoiding peritoneal invasion by pushing aside the anterior reflection of the peritoneum. These cases of perityphlitic abscess are comparatively common. They have their origin in inflammation of the appendix or cæcum (as a rule the former), and are shut off by adhesions from the general peritoneal sac. The intraperitoneal cases, of which the case I have reported is an example, are not really cases of perityphlitis as that term should be employed, but are cases of perforative peritonitis. The essential feature of the pathological state here is fæcal extravasation (gaseous, fluid or solid), and septic peritonitis. In these cases the tumor is less prominent as a symptom than in the other variety of pericæcal inflammation, but the illness is more sudden and severe, the symptoms of peritonitis become conspicuous, and the signs of collapse may quickly supervene.

In cases of perityphlitis where a tumor presents and inflammatory action is moderate, expectant methods are admissible with a hope of resolution without suppuration. When pus forms in the retroperitoneal connective tissue and is making its way toward the surface, delay may facilitate its access by allowing the peritoneum to be pushed aside. But this advantage does not counterbalance the benefits of an exploratory incision, which should be resorted to as soon as grave symptoms suggest it. The aspirator is unreliable and unsatisfactory as an exploratory means in these cases, and its use is attended with the danger of peritoneal infection. The exploratory incision is more free from danger and much more satisfactory.

With the other class of cases such discretion cannot be indulged. As soon as the diagnosis of intraperitoneal inflammation is made, abdominal section should at once be performed. Delay here is fatal. To stand in waiting, giving opium freely, is neither conservative nor surgical. The operation should be done before the septic process has spread throughout the peritoneum.

In the case here reported I believe success is due to the early detection of the lesions by the gentlemen in attendance, the prompt acceptance by the patient of the operation when proposed, and its satisfactory accomplishment. The case, I believe, is unique, and marks a further extension of the triumphs of abdominal surgery.

[4] Treves has shown by the examination of 100 bodies that the cæcum and appendix are wholly intraperitoneal, and free within the abdominal cavity; that the cæcum and its appendix are completely enveloped by peritoneum. (The Anatomy of the Intestinal Canal and Peritoneum in Man. 1885, p. 55.)

VITAL CAPACITY OF THE LUNGS AND THE VACUUM PNEUMATIC SPIROMETER.

BY JOSEPH JONES, M.D.,
OF NEW ORLEANS.
PRESIDENT OF THE LOUISIANA STATE MEDICAL SOCIETY.

The instruments for measuring the vital capacity of the chest have been designed to measure the total amount of air propelled from the chest by the deepest expiration following upon the deepest inspiration.

Our most important knowledge of spirometry was derived from Dr. Hutchinson's exhaustive paper in the Medico-Chirurgical Transactions of 1846. The instrument designed by Hutchinson consisted of a mouth-piece and tube communicating with a gasometer of registered and graduated capacity, into which the patient breathed.

Mr. Towne has of late years invented a convenient and accurate spirometer, which works on the principle of the anemometer. The advantage of this instrument is its portability. As is well known the *anemometer* is a contrivance used by the meteorologist for indicating the rate or velocity and direction of the wind.

Dr. Waldenburg has described a spirometer identical in principle with Hutchinson's, but elaborate and capable of being employed for the purpose of inhalation of compressed or rarified air.

The chief results of Dr. Hutchinson's labors may be thus summarized: The vital capacity of the lungs varies according to height, weight, age and disease.

1. *Height.*—There is an increase of 8 cubic inches in vital capacity for every inch in height between 5 feet and 6 feet. Thus the vital capacity of a healthy person at 5 feet to 5 feet 1 inch being 174 cubic inches. At 5 feet 4 inches it would be 174 cubic feet + 32 = 206 cubic inches At 5 feet 8 inches 238 cubic inches, etc.

2. *Weight.*—Excess in body weight is associated with diminished capacity in the proportion of about 1 cubic inch per pound, excess.

3. *Age.*—From 30 to 60 years the vital capacity decreases nearly 1 and 1½ cub. in. per year.

4. *Disease.*—The spirometer furnishes a very accurate standard of health, or of the extent of disease as regards the chest, the vital capacity in lung disease diminishing from 10 to 70 per cent.

Whenever the quantity of air is 16 per cent.

deficient there is reason to suspect some local affection of the chest. Dr. Graham Balfour has followed up these investigations of Dr. Hutchinson on the chest. Dr. Balfour has especially examined how far a capacity under the average may be taken as an indication either of a tendency to pulmonary disease or of a feeble constitution, rendering such men liable to a higher rate of mortality than that to which men of or above the average are subject. He found that the loss to the British army by consumption was much greater among the men having a *vital capacity "under the average"* than amongst men of average capacity, or above it; and although the proportion of deaths did not differ materially amongst those three classes, yet the invaliding was *four times* as high among men *under the* average, as among the others.

A "*vital capacity*" below the average may therefore be considered as indicating a generally feeble organization, less capable of resisting the deteriorating influences to which a soldier is exposed. (Contributions to the study of "Spirometry." Med. Chir. Transactions, Vol. XLVIII.)

Such functional incapacity is further indicated by the "*breathing being shorter* with less breath motion." The *expiration* is quick and forcible; and there is a minimum quantity of air taken in by ordinary *inspiration*. Such lessened respiration tends of itself to induce accumulation of mucus in the air cells, and thereby to set up inflammation. Everything which tends to impede or to interrupt or obstruct the regular, complete and continual performance of the respiratory act, has a most prejudicial effect upon the lungs (especially of "growing lads"), favoring the growing of the material in the air cells, which may eventually degenerate and form a cheesy mass in all respects resembling tubercle. Life not only depends on *breathing*, but the energy and the vigor of life are in a great measure ruled by the capacity and the free play of the breathing organs.—(Sibson.)

During the past eighteen years I have employed the following apparatus as an important aid in the diagnosis of phthisis, pulmonalis and other acute and chronic diseases of the pleura and lungs. The instrument has also proved useful in my hands, for the determination of the vital capacity of the lungs, as influenced by *age, weight*, stature, development and growth of *the skeleton, the growth of the muscles in relation to the bones; the progressive increase or decrease of muscular force with advancing years; and the effects of preceding attacks of pleuritis, pneumo-thorax; hydro-pneumo-thorax; bronchitis; asthma; emphysema and traumatic injuries of the lungs.*

The *Vacuum Pneumatic* Spirometer consists of a large glass globe or receiver. A. This receiver should be furnished with water to the amount of at least half its capacity. It is best to dissolve about 1 ounce of the permanganate of potash in the water, so as to remove by oxidation all deleterious organic matter which at any time might be absorbed. Diameter of large glass receiver 15 inches; circumference of largest part of large glass receiver 48 inches.

VACUUM—PNEUMATIC SPIROMETER.

A. Large glass receiver containing pure or medicated water.
BB. Glass tube and small graduated glass receiver.
C. Glass stop-cock, communicating with graduated glass receiver.
D. Flexible tube, communicating with graduated receiver B.
E. Mouth-piece communicating with flexible tube.
F. Graduated line indicating the capacity of the receiver in cubic inches.

B.B. Glass tube and small graduated glass receiver.

Diameter of large glass tube connected with small graduated receiver 1¾ inches. The tube and small graduated glass receiver may be compared to a large displacement funnel; closed on the top by a brass cap and tube, with stop-cock both capable of opening and closing. Diameter of graduated receiver 6 inches, circumference of graduated receiver 20 inches. Length of graduated receiver 12½ inches. Length of glass tube attached to graduated receiver 11¾ inches. Heighth of entire apparatus from the base of the large receiver to end of stop-cock 30 inches. The summit of the large glass globe is covered by the brass cap, 4 inches in diameter, with an internal opening of about 2 inches, through which the large glass or prolongation of the graduated receiver passes. The brass cap is also perforated by eight openings, circular, and about $\frac{4}{10}$ of an inch, each in diameter. These openings allow

free communication between the external air, and that contained in the large receiver above the liquid which it contains. The tube of the graduated receiver passes through the brass cap or support on the top of the large receiver, and reaches to within about 2 inches of the bottom of the liquid. From this arrangement, if air be blown through the flexible tube E., it will pass out of the receiver and tube, and bubble through the water and escape by the brass cap. The base or lower portion of the graduated receiver is supported by the brass cap, covering the neck of the large receiver. F. Graduated line, indicating the capacity of the receiver in cubic inches. The O mark is at the lower extremity of the large glass tube or funnel like prolongation of the graduated receiver, and the graduation proceeds regularly upwards to 240 cubic inches. The graduated portion of the receiver holds 240 cubic inches, or about 3952.2 cubic centimetres, or about 128 fluid ounces = one gallon.

MODE OF USING THE VACUUM PNEUMATIC SPIROMETER.

The patient is directed to expel all the air out of the lungs, bending the body gently and steadily forward, as he expires, so as to aid the expulsion of all the air, if possible from the lungs. The mouth-piece of the flexible tube is then placed between the lips and firmly held, whilst the patient inflates his lungs from the air confined in the graduated receiver. A partial vacuum is thus formed, and the pressure of the atmosphere about 15 pounds to the square inch forces the water in the large receiver into the tube and receiver. The amount of air thus inspired corresponds to the column of liquid which rises in the graduated receiver and is indicated in cubic inches.

GENERAL RESULTS OF INVESTIGATIONS ON THE VITAL CAPACITY OF THE LUNGS IN HEALTHY AND DISEASED INDIVIDUALS, AS SHOWN BY THE INDICATIONS OF THE VACUUM—PNEUMATIC SPIROMETER.

1. The accuracy of the conclusions of Dr. Hutchinson as to the relation of height, weight, age and disease to the vital capacity of the lungs have been confirmed by over 1000 experiments. The general results of the investigations of Dr. Balfour have also been confirmed.

2. In cases of incipient tuberculosis, or in the early stages of this disease the cubic vital capacity of the lungs irrespective of the height or weight, or age of the adult patient (male) do not exceed on an average 130 cubic inches.

3. In the advanced stages of phthisis pulmonalis, the vital capacity of the lungs in adult males ranges from 60 to 120 cubic inches.

4. No correct estimate can be made of the cubic capacity of the female lung, unless the corsets and all bandages be removed from the thorax and abdomen.

Similar decrease in vital capacity of the lungs is noticed in the female suffering with phthisis pulmonalis.

5. The vital capacity of the lungs is diminished in chronic bronchitis and in pleuritis. In the latter disease, the diminution of the vital capacity in the lungs will correspond with the amount of liquid effused into one or both pleural cavities.

6. The vital capacity of the lungs is diminished in emphysema, in asthma during the paroxysm when the disease is spasmodic, in permanent asthmatic conditions of the lungs, and to a limited extent in chronic bronchitis.

7. Certain cases of general paralysis and locomotor ataxia, when attended with diminution of the vital capacity of the lungs, without structural alteration, or the deposit of tubercles in these organs, such diminution being due to the loss of muscular power in the thoracic walls.

8. If the liquid contained in the large glass receiver be medicated with carbolic acid, iodine, petroleum or other volatile substances, beneficial effects may result from the use of the vacuum pneumatic spirometer.

9. The daily inflation of the lungs, by the use of the vacuum pneumatic spirometer has proved beneficial in some cases by enlarging the capacity of the air-cells. We have the means of observing accurately the changes in the capacity of each individual under treatment.

10. The use of the vacuum pneumatic spirometer, gives precision to diagnosis, and accuracy to prognosis.

156 Washington St., 4th District, New Orleans, La.,
April 23, 1888.

THE EXTERNAL APPLICATION OF SULPHUR IN SCIATIC NEURALGIA.

Read before the Illinois State Medical Society, at its Thirty-eighth Annual Meeting, in Rock Island, Ill., May 15, 1888.

BY J. D. COWDEN, M.D.,
OF ROCK ISLAND, ILL.

Sulphurous baths, natural and artificial, have been in vogue for a long time in the treatment of rheumatism and neuralgia. The external application of the flowers of sulphur, however, in the treatment of sciatica, although its therapy, on second thought, from our previous knowledge of the action of sulphur, would seem rational enough, has but recently been tried.

In the *Therapeutic Gazette*, for April, 1888, will be found an article on "The External Application of Sulphur in Sciatic Neuralgia." In confirmation of what is therein stated, I beg leave to report to this Society the following case which recently came under my observation:

J. R., æt. 45, weighing 180 lbs., an Irishman of sanguine temperament and strong constitution,

in robust health up to the time of this attack; saloon-keeper by occupation, "very happy" in his calling and "cheerfully waited upon his customers." For two months before I was called to see him he had been an almost constant sufferer from sciatic neuralgia. He finally became unable to walk about, took to his bed, and to use his own language at the time I first saw him: "I am suffering the tortures of the damned and am not able to sit, stand, nor lie." He had a haggard, worn look, and his condition indeed pitiable in the extreme. For some four weeks the usual remedies for neuralgia were tried with indifferent results, until finally, in addition to the usual treatment it took morph. sulph. gr. ss.; atropia sulph. gr. $\frac{1}{60}$, hypodermically, twice or three times in the twenty four hours to give him even temporary relief from his horrible suffering. At the end of this time I called one morning and found him in agony, writhing in torture and completely discouraged. He begged most piteously for the hypodermic injection and said he would die. I told him I would give him no more hypodermics and no more medicine, but would bury him in sulphur instead. He then said: "My God! doctor, I will die before night if I don't get relief." I told him that if the sulphur did not relieve him he would have to die, as that would be the only treatment for the next twenty-four hours.

The limb was accordingly enveloped in the dry sulphur. In less than two hours he was sweating profusely, sleeping soundly, and oblivious to all pain and suffering. He woke up in the evening long enough to take some nourishment, then again fell asleep and slept continuously during the following night, the perspiration continuing, and awoke in the morning free from pain, able to turn over in bed and move and extend the limb in all directions without complaint. The look of suffering that had been so marked before the application of the sulphur was gone. He then got up and, to his great surprise, walked easily about the room without suffering or pain. He was then put into a large wash-tub, thoroughly scrubbed and washed with soap and water, after which, at his own request, he was again put to bed and the sulphur reapplied to the limb and sacral region of the spine. The next morning he was given another bath, the neuralgia had disappeared, and from that time on, without further medication, his recovery was continuous and, so far as the pain is concerned, up to this writing is complete.

For a few days after discontinuing the sulphur he suffered from sleeplessness and nervous prostration, but the further progress of the case towards recovery was left to the *vis medicatrix naturæ*.

The perspiration, the breath, and urine, after the application of the sulphur, were very soon impregnated with sulphuretted hydrogen, making it very disagreeable for the patient and his attendants on that account. The rapid absorption of the sulphur, as shown by the profuse perspiration, perfumed breath, etc., and the speedy relief which followed its application, would seem to point to a specific action of the remedy.

On April 30, some two weeks after the above report was written, the patient had a relapse, caused by sleeping in a draft between two open windows, and the sulphur had to be reapplied. The same happy effect, entire relief from pain, followed as quickly and promptly as it did on the first application of the remedy.

On May 10, in consequence of his anæmic condition, caused by his long sickness, I put him on 20-drop doses of the tincture of iron four times a day, since which time he has rapidly gained in health and is now entirely free from his neuralgia.

"There is a pleasure in the pathless woods" of speculative medical philosophy, "a rapture on the lonely shores" of the imagination of the disconcerted doctor, known only to certain medical minds so formed as to be ever open to the reception of theoretical ideas and impressions for the relief of suffering humanity. It may yet prove to be a most happy conception, freighted with relief for suffering mortals, which suggested to the imagination of the enthusiastic, speculative medical philosopher the idea of applying sulphur externally in sciatic neuralgia, so quickly and speedily does entire relief from horrible suffering follow its application.

MEDICAL PROGRESS.

SULPHONAL AS A HYPNOTIC.—DRS. J. C. WILSON and R. HUTCHINSON report five cases in which sulphonal was used. *Case 1* was a control test to the subsequent investigations, gr. xxv of the drug were given to a healthy male adult upon retiring, with no more effect than his normal, peaceful repose, and with no ill-effects whatever. In the second case, one of terminal dementia, with a history of alcoholism and opium taking, with marked delusions of a depressing character, and acute exacerbations at irregular periods, when he becomes restless, sleepless and noisy. Gr. xxv and lv of sulphonal within four hours had no perceptible effect. The only case in which it had any effect was that of a male, 46 years old, in the preataxic stage of tabes dorsalis; business worries; habitual bad sleep; frequent excesses in drink, followed as a rule, by great mental and physical depression and prolonged inability to sleep, often extended, despite large doses of chloral, the bromides, hyoscine, etc., for several nights in succession. Morphine hypodermically not well borne. May 25, after two nights of distressing wakefulness, took 15 grains of sulphonal at 6 P.M.; 30 grains at 7 P.M.; 15 grains at midnight, after which he slept quietly for two hours.

May 26, took at 11 P.M., 30 grains, and slept continuously eight hours without interruption. May 27, took at 10.30 P.M., 30 grains without effect. This patient suffered from the gastro-hepatic catarrh, which usually follows a prolonged debauch, and took even liquid food with difficulty; much thirst and nausea; occasional vomiting. No aggravation of these symptoms, and no effect whatever upon the pulse, respiration or temperature, followed the administration of the sulphonal. The preparation used in these observations was Merck's.

These observers regard sulphonal as superior as a hypnotic to chloral, paraldehyde, the bromides, amylene hydrate, opium, and cannabis indica. It is a pure hypnotic, and without disagreeable after-effects.

The dose for an adult is ¼ grams (gr. xv–lx). It may be given in water or mixed with fluid articles of diet. In these doses sulphonal has no influence on the digestive organs, nor on the respiration, circulation or temperature.—*Medical and Surgical Reporter*, June 9, 1888.

ESERINE IN CORNEAL ULCERS.—DR. HERBERT HARLAN, of Baltimore, says in an article on this subject:

Having been much impressed with the value of eserine in corneal ulcerations, and finding that very few druggists, even in so large a city as Baltimore, keep a supply of the drug on hand, it occurred to me that physicians were neglecting a valuable remedy, and that it would perhaps not be amiss were I to call attention to its value as a therapeutic agent in this class of cases. The best-known physiological effect is the marked contraction of the pupil following the installation even of very dilute solutions into the eye. It was in 1875 that the anti-glaucomatous effect of eserine was first discovered by Professor Laqueur, of Strasburg, and its very greatest value is in this terrible disease.

That eserine has the power of lessening intra-ocular tension has been demonstrated by many observers. In ulceration of the cornea the worst symptom is the photophobia, and the greatest danger is rupture of the eyeball from intra-ocular pressure. We thus have an agent which, while it contracts the pupil, and shuts out much of the annoying light, at the same time lessens pressure and the danger of rupture, keeping the eye in the best condition for the reparative process, and the patient in the most comfortable situation possible during this time. Thus, theoretically, eserine should be a valuable agent in corneal ulceration, and I think the cases reported below bear me out in the statement that it really is.

There is one variety of corneal ulcer to which I have found it particularly adapted, namely, that following a blow from a piece of an oyster-shell, described first, I believe, by Dr. W. J. McDowell in 1879, under the name of "oyster-shucker's corneitis." My experience, however, extending over the last seven years, differs from that of Dr. McDowell in several particulars. First, he lays especial stress on the central location of the lesion, which he refers to as a "pearly opacity of interstitial exudation, appearing always near the centre of the cornea." The etiology he considers "a specific toxic element contained in the slime and dirt which coats the oyster-shell," which, getting into the eye, starts the trouble; for, says he, "no trace of traumatism can, by the closest scrutiny, be detected." My notes of cases show that the spots occur anywhere on the surface of the cornea, often there is evidence of traumatism, and I have many times removed small pieces of shell. Still, in most cases, there is no break in the smooth corneal surface. For the first few days there is merely the perfectly circular white spot, accompanied by photophobia and congestion of the scleral zone of blood-vessels. A few such cases go on to get well with simple treatment and without complications. The majority do not, and after several days the opacity is very white and looks much like a foreign body. If any attempt be made to remove it as such, it will be found to be a slough of the outer layer of corneal tissue, free at the edges, and only attached at the very bottom. A day or two later this slough comes away, leaving an ulcer with sharply cut edges of about the size of the head of a large pin. Until I began to use eserine I found these ulcers often very intractable, entailing on the patient, in most instances, several weeks of suffering.

Of the eighteen cases ten were surely and positively benefited, being under observation several days. Seven were seen but once, and from this fact it is a fair presumption that most of them required no further treatment. One case only did not seem to be benefited. This patient was under observation for seventeen days, and during this time various remedies were used without avail. On his last visit he was directed to return to the use of the eserine. His case was not from injury by oyster-shell.

Finally, in the use of eserine two cautions are to be observed: First, not to make the solutions too strong. With many patients a solution stronger than gr. j. to ℥ j. gives a great deal of pain; and, second, to be very sure that the case you are treating is not complicated by iritis.—*The Medical Record, June 23, 1888.*

TREATMENT OF CARDIAC AFFECTIONS.—That adonis vernalis in doses of from 3 to 7 grams in twenty-four hours, and convallaria majalis, do not merit the appellation of substitutes for digitalis is Nothnagel's clear conclusion. But they may be tried if digitalis has failed. Sparteine prescribed in milligramme doses regulates the pulse and modifies the contractions of the heart,

but it does not possess the diuretic action or the influence over blood pressure possessed by digitalis. Caffeine ought to be prescribed in minimal doses of 1 gram every day, in 5 parts. Nothnagel has used 3 grams, and prefers either the salicylate of soda and caffeine, or the benzoate of soda and caffeine. Its only inconvenience is the excitation of the nervous system; but it is an excellent diuretic, and especially indicated where there is dropsy. Nothnagel alternates five or six days of digitalis with ten or twelve of caffeine. It would be preferable to combine calomel with opium when it is wished to cause diuresis, according to the method of Jendrassik (.5 to .6 gram of calomel during three or four days). But it is necessary to cause evacuations, lest the calomel be transformed into sublimate and attack the intestinal mucous membrane; of course the mucous membrane of the mouth must be watched. As to the method of Oertel and the treatment of cardiac degeneration by ascension of heights combined with subtraction of liquids, Nothnagel, although very sceptical, appears inclined towards the view that the ascensions may exercise a stimulant effect on the degenerated heart muscle and cause a useful hypertrophy, but that prudence is highly necessary in recommending this variety of treatment.—*Lancet*, June 2, 1888.

BOILING WATER IN SURGERY.—In a lecture on "Certain Antiseptic Principles, and on the Value of Boiling Water in Surgery," M. TERRILLON says that the supposed sterilization of instruments by plunging them into an antiseptic liquid, such as a 20 per cent. solution of carbolic acid, is only illusory disinfection, since it is necessary that the antiseptic solution penetrate to all the crevices and anfractuosities of the instrument, which is often a difficult thing to realize on account of dried blood-clots, etc., in such places as the teeth of hæmostatic forceps. For these reasons Terrillon began two years ago to sterilize his instruments by placing them in boiling water for ten minutes. He has every reason to be satisfied with the results.

Every instrument intended for use in an operation should be boiled for ten minutes in water that has passed through a Chamberland filter. At the time of the operation these instruments are placed in a glass or porcelain plate, and a solution of carbolic acid is poured over them. At the conclusion of the operation the instruments are thoroughly cleansed, being placed in tepid water for a few minutes, and then scrubbed with an appropriate brush, which has been washed, soaped, and passed through potash and carbolic solutions. They are then plunged into boiling water, where they are left for ten minutes. After this the instruments are placed in a special vessel, in which they are excluded from the outer air until the next operation, when they are again boiled. This double boiling at intervals of several days is especially useful, since it insures the destruction of spores.

All parts of surgical instruments should be metal. Terrillon's instruments have no wooden parts of any kind.

Sponges are difficult to render aseptic. They should not be placed in boiling water, since this injures them. They are first washed in water to free them from foreign substances, then placed in a solution of permanganate of potash for several days, washed again, and then placed in a 5 per cent. solution of carbolic acid or a solution of corrosive sublimate for seven or eight days. To keep them they should be dried and shut up in a dry jar, or placed in a weak antiseptic solution.

Terrillon sometimes uses sponge tissue, which he prepares in pieces as large as the hand. These, stitched together, make excellent compresses. To sterilize them he uses soap and water, and then boils them for a quarter or half an hour in strong carbolic solution, and keeps them in an antiseptic liquid.

To prepare silk for ligature material, it should be boiled for a few minutes, and then kept in sublimate solution, or in a very weak solution of carbolic acid. When needed for an operation, it is taken from the receptacle with a pair of forceps, and plunged into boiling water.—*Bulletin Médical*, No. 46, 1888.

THE USES OF BELA.—The *Crataeva marmelos*, known in India as the Bel or Bela tree, belongs to the family Ruteceæ, series Aurantiæ. The root, bark and leaves are thought in Malabar to be refrigerant. The bark of the root is prescribed in India in the form of decoction in intermittent fever, and the bruised and boiled leaves are used as cataplasms in ophthalmia. The decoction of the bark of the trunk is used in cardiac affections, and the distilled water of the leaves is regarded as alexipharmic. But the part most used is the fruit, especially its mucilaginous pulp, which has an agreeable odor and sweet flavor. By dessication it loses its aroma, but preserves a slight acidity. In commerce the fruit is obtained entire or in dried slices, grayish, with a smooth exterior coat, containing a gummy pulp, hard, and of a brownish or orange color. The microscope shows that the fruit has a thick cuticle and two layers, one containing numerous cells filled with small oily drops, the second formed of silerenchymatous layers. The pulp is formed of large cells. The grains yield up to water a mucilage similar to that of flaxseed.

As regards the chemical composition of the pulp, its chief contents are mucilage and pectin. The first is not colored by iodine, and consists of two substances, one of which is soluble in water. The second is not soluble, but swells up like gum tragacanth, forming a glutinous transparent mixture. Collas, physician in chief of the marine at Pondicherry, has found 5 per cent. of tannin in

this pulp, though Flückinger could find no traces of it. But according to Warden the fruit, ripe or unripe, moistened with a solution of chloride of iron, gives a pronounced tannin reaction in the part of the pulp near the epicarp. The mucilage in the grains is acid, and contains lime.

The pulpy part of the fruit, when ripe, is said to be of agreeable flavor, and is relished even by Europeans when made into sorbet and mixed with tamarind pulp. It acts as a slight laxative, and is useful in cases of habitual constipation accompanied by flatulence, and has been recommended for the purpose of regulating the bowels during an epidemic of cholera, to prevent either constipation or diarrhœa. In India the unripe fruit is regarded as an astringent, and is recommended as a valuable remedy in chronic diarrhœa, dysentery. The bela mixture, 2 parts of the pulp, 4 of water, and 2 of sugar, in the form of sorbet, is said not only to act well in diarrhœa, but also has the singular property of being aperient as well. If this is rejected by the stomach the extract may be substituted for it. The extract is obtained by treating the pulp with water, and then evaporating to a soft consistency. The dose is from 2 to 4 grams two or three times a day. It is more active when made from the fresh pulp.—*Nouveaux Remèdes*, No. 8, 1888.

Suture of Wounded Liver.—The *Riforma Medica* of June 9th contains a full account of Professor Postempski's operation for wounded liver. Antonio A., aged 28, was stabbed under the arch of the ribs, on the right side, on April 18th. The cutaneous wound, which was parallel to the costal margins, was five centimèters in length, whilst that of the liver (left lobe) was seven centimèters long, and three in depth at the deepest part. The patient, when seen, was in a state of profound collapse from loss of blood. There was no difficulty about the diagnosis, as exploration with the finger served to disclose the nature of the case. Professor Postempski, who had satisfied himself so far back as 1885, by experiments on dogs, that the liver-substance could be stitched without giving way, determined to try that mode of treatment. He accordingly enlarged the wound in the skin by five centimèters, and made a second vertical incision in the middle line across the first. The wounded lobe was pushed forward as far as possible, and, while the pieces of sublimated gauze, with which the wound had in the first instance been plugged, were being withdrawn, six points of chromiced catgut suture were passed through the whole depth of the wound with extremely fine curved needles. The sutures were very carefully tightened as they were introduced, the edges of the wound being at the same time gently pressed together, so that the loop of catgut did not draw them into contact, but merely kept them in apposition. The sutures were tied in a knot, and there was not the slightest laceration of the liver-substance through which they were passed. Hæmorrhage ceased at once, but the critical condition of the patient made it impossible to wash out the peritoneal cavity at all thoroughly, and Dr. Postempski believes that the greater part of the extravasated blood remained in the abdomen. There was no rise of temperature, however; but, on the second day after the operation, there was very abundant albuminuria, which lasted for twenty-four hours, when it completely ceased. The patient got up on the eighteenth day, and he is now perfectly well, without any local pain, or any appreciable enlargement of the liver.—*British Medical Journal, June 16, 1888.*

Carbolate of Mercury.—The compound originally recommended by Gamberini was a basic salt, having the composition $C_6H_5OHg.OH$, and prepared by dissolving 122 parts of carbolate of potash in 1000 parts of water, and pouring the filtered solution into a solution of 271 parts of mercuric chloride in 8000 parts of water. An orange-colored precipitate is formed and collected on a filter, thoroughly washed, and dried in the dark at a temperature of 80° C. The neutral salt is, however, preferred; its formula is $(C_6H_5O)_2Hg$. To make it dissolve, 188 parts of absolute phenol and 56 parts of solid caustic potash on a water-bath in the smallest possible quantity of alcohol. Add to this an alcoholic solution of 135 parts of corrosive sublimate. Evaporate the mixture nearly to dryness with constant stirring; add some boiling water, and collect the product on a filter; wash first with pure water, then with water containing acetic acid; drain the product on a porous tile, and recrystallize from alcohol. The salt forms colorless needles, nearly insoluble in water and only slightly so in cold alcohol. It dissolves in 20 parts of boiling alcohol, also in ether and in glacial acetic acid. It is not decomposed by caustic alkalies, by sulphuretted hydrogen, or even by ammonium sulphide. Dose ½ to ⅓ grain three times a day.—*Pharmaceutical Record*, June 1, 1888.

Antipyrin in Cerebro-Spinal Meningitis. Mr. Guy N. Stephen, of the Cyprus Medical Service, says: Antipyrin is of the greatest possible value in epidemic cerebro-spinal meningitis. Its success in the disease depends less on its property of reducing temperature than on its power of quelling those "nerve storms" which are one of the principal causes of death in this disease.

Its value is all the greater in that it is not, as in the case of other diseases, only a mere addition to the armament of the physician, but that it is practically the only medicine which is a real "remedy" against the disease.

Opium, ergot and belladonna, bromides, and aconite all do good service in allaying the terrible pains, and perhaps in favorably influencing the course of the disease, but they have no power of warding off impending death, while antipyrin I have found to fulfil all three indications. The necessary doses vary somewhat, but 45 grains in three doses distributed over the evening and night is the most usually successful quantity. I have not yet had an opportunity of trying it in idiopathic, traumatic, or tubercular inflammations of the meninges, but the pathological conditions, apart from the causation and the symptoms, are so allied in character with those of cerebro-spinal fever that I would suggest a trial and expect it to yield results at least as favorable as those of the remedies already in vogue.—*British Medical Journal*, June 9, 1888.

PUERPERAL URÆMIC AMAUROSIS.—A case of uræmic amaurosis in the puerperal period is noted by DR. P. MARCUSE. The patient remarked five weeks before delivery that her urine was dark and scanty and that her feet were swollen. Immediately before her confinement the secretion of urine almost entirely ceased, but there was no headache, vomiting, or loss of consciousness. As soon as the pains began, however, violent headache came on. The labor was normal; after it was over, vomiting was added to the headache, and a quarter of an hour later the patient was completely blind in both eyes. The next day the eyelids were closed. When opened with the fingers the eyes appeared dull and wandering; the pupils were of equal size; there was complete amaurosis; both feet and legs were greatly swollen; but there was no swelling of the face, and very little ascites. During twenty-four hours the urine passed was about nine ounces; it was of a dark reddish-brown color, and contained 1 per cent. of albumen. Ice bladders, morphia and diuretics were ordered. The patient very soon improved. In four days she could see to read, and in a fortnight she was convalescent.—*Lancet, June 16, 1888.*

SEMOLINA IN DIABETES.—MR. W. STANLEY ARMITAGE writes, in the *Lancet* of April 28, 1888:

Some time ago I had the opportunity of watching a case of persistent glycosuria very closely, and found that at a time when the ingestion of a very small amount of toast, bread, or other farinaceous food was sufficient to produce Fehling's test afterwards in the urine a large quantity of semolina pudding could be consumed without any such result. I was induced to try semolina after hearing of the method of its manufacture from an Edinburgh gentleman. As the quality of this food seems to me likely to vary, I ought to state that what was used in this case was obtained of an Edinburgh, house, and was stated to be of the best. This I mention because, if carelessly prepared, no doubt much of the farinaceous element might be retained, though I am not aware that this ever is the case. Not having heard of semolina as a food in diabetes, I should much like to hear of anyone who may have tried it, and would also request other medical men to see if it can be given in other and more pronounced cases of diabetes with a like good result. If such were the case, as it could be cooked in various forms, or baked as bread, it would add considerably to a class of food which is at present only far too limited.

PHYSIOLOGICAL AND THERAPEUTIC PROPERTIES OF OLEANDER.—DR. POULOUX, at the close of a thesis on this subject, draws the following conclusions:

1. Oleander (nerium oleander) is a very active poison, the toxic properties of which are due to several substances somewhat similar to strophanthine and digitaline, and probably belonging to the group of glucosides.

2. Oleander has a manifest action on the frog's heart, arresting it in systole, as well as on the heart of the rabbit.

3. In cases of asystolism due to renal, non-compensated or cardiac lesion, oleander gives tone to the heart, and increases diuresis. It seems to be indicated in the same cases as digitalis.

4. Further researches are necessary to determine the cases in which oleander is really useful and in which it is contraindicated.

5. It does not cause cumulative symptoms, and may be given for an indefinite time without causing accidents.—*Nouveaux Remèdes*, No. 8, 1888.

ACTION OF STROPHANTHINE.—GLEY claims that his effects from strophanthine are entirely different from those obtained by Lemoigne with extract of strophanthus. He has found that not only in diuresis not produced by the active principle, but that the quantity of urine is diminished, and that the kidney decreases in size, as shown by mensuration. There is an enormous increase in central and peripheral pressure. These facts seem to show that there is some other substance in the extract than the active principle.

THE TREATMENT OF PERFORATIONS OF THE TYMPANUM.—DR. POLO states that he has met with great success in the use of the fresh pellicle of the egg in closing perforations of the tympanum. The grafting of such a thin organized substance excites no irritation, and may be retained for a long time; as long as ten months. The application of the membrane is difficult, and requires skill. The use of gold beater's skin has been practiced for this purpose a long time in Paris, but it remains as a foreign body, and does not permanently adhere, whence it becomes a source of irritation at the bottom of the meatus.—*Journal de Méd. de Paris*, April 22, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 7, 1888.

MEDICAL COLLEGES AND MEDICAL ETHICS.

A correspondent connected with a regular medical college writes us substantially as follows: A man matriculates in the medical college as a student, attends one annual course of instruction and proposes to continue the required length of time, and become a candidate for the degree of M.D., in apparent regular course. At the same time he holds a *diploma* from another medical college that he tacitly acknowledges he simply *purchased;* that he is now, and has been for some time, publicly engaged in the treatment of disease with a secret remedy; and that he will not agree to discontinue such practice should he receive the regular diploma of the college in which he is a matriculate. With this statement of facts, our correspondent requests from us answers to the following questions: 1st. Can the college confer upon him its degree of Doctor of Medicine without violating some provision of the National Code of Medical Ethics? 2d. If the said matriculate continues his attendance and conforms to all the published requirements of the college, including certificates of moral character, has the college the right legally to refuse to confer on him the diploma, on account of his known practice with secret remedies?

The following paragraph from the Code of Medical Ethics, is perhaps the most direct answer to the first question, viz.:

"It is not in accord with the interests of the public or the honor of the profession that any physician or medical teacher should examine or sign diplomas or certificates of proficiency for, or otherwise be specially concerned with the *graduation* of persons whom they have good reason to believe intend to support and practice any *exclusive* and irregular system of medicine." Treating disease with *secret* remedies is certainly the climax of *exclusiveness*. And another paragraph in the same division of the Code says: "Equally derogatory to professional character is it for a physician to dispense a *secret nostrum*, whether it be the composition or exclusive property of himself or others."

Concerning the second question we have no hesitation in answering in the affirmative. The faculty and trustees of a medical college have an undoubted right to refuse granting the diploma to any person whose known professional practices are such as would debar him from every reputable medical society in this country and exclude him from professional recognition by members of the profession generally. Not only have they such right, but they are under the strongest obligation to faithfully exercise that right, by refusing such an one a place in any list of *candidates* for graduation.

EYE TROUBLES IN TABES.

Some years ago M. EMILE BERGER made a report of a series of researches, in which he had been engaged, in Austria, in regard to the eye trouble caused by tabes dorsalis. These researches were finished in Paris, and on June 4 M. Berger made a second report on the subject, to the Académie des Sciences. This report includes 109 cases, of which 47 were syphilitic, 26 were in the pre-ataxic stage, 50 in the ataxic, and 33 in the paralytic stage.

Among the symptoms not hitherto described is diminution of intraocular tension, which was very striking, and was of all degrees up to feeble resistance of the globe. In 2 cases only was there hypertonia, but this was developed before the commencement of the tabes. Of the cases presenting considerable hypotonia, this phenomenon was present on one side only in 2 cases in the pre-ataxic stage, and in 11 cases each in the ataxic and paralytic stages; it was present on both sides in 4 cases each in the three stages. Hypotonia, therefore, is more infrequent in the pre-ataxic stage.

Another symptom noted was paralysis of the smooth muscular fibres of the eye-lids, which are

supplied by the sympathetic system. The consequence of this is slight narrowing of the palpebral opening. Narrowing of the palpebral opening was found in 42 cases, exclusive of cases of paralysis of the third pair: in 17 of these cases it was on one side only (3 in the pre-ataxic, 6 in the ataxic, and 8 in the paralytic stage). In 25 cases it was double (3 in the first stage, 9 in the second, and 13 in the third).

Myosis was found to coexist with diminution of the palpebral opening: in subjects affected on one side only, 6 times; in those affected on both sides, 11 times. The frequency of this slight fall of the pupil increased progressively from the commencement to the paralytic period.

Another symptom, hitherto unknown, is deformity of the pupil of tabetics, which frequently ceases to be circular; it is often elliptic, its long diameter being from without inwards and from below upwards, symmetrically on both sides (14 cases); in a fewer cases it was transverse (11 cases), or in other directions. In all Berger found 32 cases in the pre-ataxic stage, 20 in the ataxic, and 5 in the paralytic, in which the form of the pupil differed considerably from the normal circular; in almost all cases this was combined with myosis. This phenomenon, says Berger, is strongly against the opinion that tabetic myosis depends on spasmodic stricture of the sphincter of the iris, and he rather thinks it due to paralysis of the iridal vessels—unequal paralysis in the different meridians. But myosis very often coexisting with paralysis of the muscle of accommodation, it seems incomprehensible, from the neighboring origin of the nerve fibres of the two intro-ocular muscles, and their common path, that one should be in an active state for several years, while the the other is paralyzed.

The coexistence of myosis, diminution of intra-ocular tension, and slight narrowing of the palpebral opening, reminds one of the analogous symptoms that appear after section of the great sympathetic, and shows that this nerve plays an important rôle in the existence of certain ocular symptoms in tabes. In fact, Vulpian's students have found pathological alterations in the sympathetic of tabetics. But the possibility of each of these symptoms presenting itself alone shows that sympathetic alterations are not the cause, but that this nerve is the path of transmission of irritations from the cord to the eye.

LIVER-TISSUE EMBOLI.

In the *Deutsches Archiv für klinische Medicin* for April, Bd. 42, Hft. 5, are recorded three cases of this exceedingly rare pathological condition. The first two are reported by G. SCHMORL, of the Pathological Institute in Leipzig. His first case was that of a railway employé, who was crushed between two cars, the liver being ruptured. At the autopsy the right auricle was found to contain a brownish-red mass, which proved to be liver-tissue. The piece was of irregular shape, about 3.5 cm. long, about 3 broad, and 2 cm. thick, weighing 35 grams. Its upper surface was uneven, and covered with numerous particles of liver-tissue. In the right ventricle was a similar piece, a little larger, caught between the anterior papillary muscle and the anterior wall of the ventricle. Smaller pieces were found between the trabeculæ. The left ventricle contained an oval piece of liver-tissue "about the size of a bean." The foramen ovale was not closed, and was permeable to a medium-sized finger.

The whole pulmonary vascular system contained embolic masses of liver-tissue, but more in the right lung. The main branch to the right lung was completely plugged. In both lungs there was extensive fat-embolism from the liver-cells. The renal arteries also contained liver-emboli, even in the left kidney, and other emboli were found in the vessels in other parts of the body.

This case is especially interesting on account of the patent foramen ovale, through which the embolic material reached the left heart. A somewhat similar case is recorded in Cohnheim's *Vorlesungen*, in which an embolus from the iliac vein passed through the foramen ovale into the Sylvian artery, in the case of a woman 35 years old. Litten has also recorded a case (*Virchow's Archiv*, Bd. 80, S. 281,) in which portions of a thrombus of the right heart passed through the foramen into the right iliac artery.

Schmorl's second case was that of a man that fell four stories, and was taken up dead. The liver was ruptured, but there was no injury to the vena cava inferior. The anterior wall of the left ventricle was ruptured, as was the endocardial lining of the posterior wall. The right auricle and ventricle contained pieces of liver-tissue. The pulmonary artery, and its large and small branches, especially those of the lower right lobe, also contained plugs of liver-tissue. No fat-emboli

could be found, but the pulmonary capillaries contained liver cells.

Jürgens and von Recklinghausen have reported cases of liver-tissue embolism. Jürgens reported several cases of delirium tremens with extensive fat-embolism of the lungs, spleen and kidneys, in which liver-cells were found in the right heart and capillaries. The report does not state whether in these cases there was any injury to the liver that caused the wandering off of liver cells into the blood-vessels, but it must be concluded that such was the case. Von Recklinghausen's case was one of fat-embolism of the lungs containing liver-cells.

As a supplement to Schmorl's cases VON ZENKER reports, in the same journal, a case of gunshot wound of the liver and heart with liver-tissue embolism. At the autopsy liver-emboli were found in two branches of the right pulmonary artery. The carbine ball had passed through both ventricles, the lower lobe of the right lung, the liver, and had torn the vena cava inferior.

In Schmorl's first case the heart had stopped in systole; it is evident, therefore, that between the rupture of the liver and the cessation of cardiac action there must have been at least one beat of the heart, and probably more, else there could not have been such wide dissemination of portions of liver-tissue. The case shows the negative pressure in the heart, the amount of the suction-power of the heart, even with a ruptured vena cava inferior, since notwithstanding this rupture, there was but a comparatively small amount of blood in the abdominal cavity. The cases also show that the right lung is the site of predilection of pulmonary emboli.

THE WAVE OF SURGICAL PROGRESS.

There are complaints on many sides that the medical journals are filled with surgical literature. Certain it is that, no one need complain of the lack of surgical literature nowadays, since the greater part of the space of both European and American journals is devoted to surgery. The "wave of deep surgical wisdom" that Mr. Gregg says is passing over America to-day, is but a portion of the wave that has overflowed Europe. And it may be safely said that while this wave may have caused some little destruction, the preponderating effect has been in the highest degree beneficial.

And one of these benefits of the present surgical tendency is the stimulating effect it has had on the profession. To a certain extent medical men may be said to be working both ways—from first to second, and again from remote back to first principles; and the first principles to which we are rapidly tending, and in which there is so much of promise for the future, consist in the recognition of chemistry, organic and physiological especially, as the field in which the greater part of future medical work must be done. We must find out what is going on in that busy laboratory, the human body, and what changes will take place in its retorts and crucibles under given conditions.

A moment's reflection will show that the present ascendency of surgery is in a large measure due to the work that has been done in chemistry of late years. We can not regard the preponderance of surgical work as in any sense an evil. Thousands of years are being added to the aggregate of human life by it. It indicates increased activity on the part of the profession, and increased activity means broadening on the intellectual side of the profession, which must be accompanied always by better judgment, less dogmatism, more modesty, better *morale*, and a better profession in every respect. It would seem that there must be less individual exclusiveness in an active, intellect-working profession, more sociability. Busy brain-workers have no time for private quarrels and jealous bickerings. The fact that many are working is an incentive to others, less energetic, to be at some kind of work. In so far as circumstances will permit, each one will go about the work most suited to his tastes. When new fields of work are opened there will be found workers to enter them and labor in them.

There is but little doubt that the present wave of surgical progress will, after a time, give way to one of another branch of medicine. The solid groundwork that is being laid by surgeons will remain—there will be no steps backward—but there must come, sooner or later, a wave of progress in preventive medicine and physiological chemistry, which latter has but a small foot-hold in this country now. Meanwhile, so far from being a cause for complaint, there is reason to be thankful that surgical wisdom has not knocked in vain at our doors.

DANGERS OF SILVER TRACHEOTOMY TUBES.

DOCENT DR. ST. SZCZ. ZALESKI, of Dorpat, has recently called attention to the fact that silver tracheotomy tubes are corroded by the secretions of the body, with which they come in contact. He relates a case in which a tube was left in the trachea for two years, and at the end of this time there was nothing left but a mere shell. Zaleski explains the chemical process by which the metal was dissolved by the continual action of the chlorides, that exist in almost all the secretions of the body, upon the metallic silver. Chloride of silver is thus formed, and is acted upon by the alkaline secretions, which contain ammonia and cyanides, in the same way as the sulphocyanide of potassium has the power of dissolving chloride of silver. Of course a part of this silver is expectorated, but it is probable that a large part is absorbed. Zaleski, in order to find how much of a tube is dissolved in a given time, performed tracheotomy upon a cat, and inserted a silver biliary fistula tube, which remained in until the cat died, a month later. The tube lost in this time .0056 gram, or .282 per cent. of its weight. Thus it is seen that not only silver pessaries in the vagina or silver tubes in biliary or gastric fistulæ, but silver tracheotomy tubes in in the trachea can be dissolved, the metallic silver being taken up by the fluids of the body.

Is this gradual wearing away of silver detrimental to the body, and to what extent? We know that the long continued and constant internal use of silver preparations in very small doses ultimately produces argyria, a grave and dangerous affection. The cases recorded by Orfila, Fromman, Riemer, and Dittrich, show that the manifestation of the deposition of silver in the tissues by the occurrence of a grey discoloration of the skin takes some time, but the actual deposition of the metal in the tissues begins much sooner, producing latent argyria, during which there is no discoloration, though, as experiments on animals show, the health is affected. If now a silver tube weighing 10 to 16 grams be used, if only half of it be absorbed by the tissues, we have the conditions for the production of argyria. Again, we cannot lose sight of the fact that the irritant action of the dissolved silver upon the delicate mucous membrane of the air-passages. There is still another danger if the patient and his attendants be so negligent that the tube is not cleansed and examined. The destructive action of the secretions will go on until the tube is worn down to a mere film—and the patient's life is jeopardized by the likelihood that the intratracheal portion will break off and asphyxiate the patient.

Zaleski thinks that the most suitable materials for tracheotomy tubes are gold, platinum, rock crystal, porcelain, glass or ivory; though the gold and platinum may be dissolved to a certain extent after a time, especially by the sulphuretted hydrogen which is sure to exist if disinfection is imperfect.

EDITORIAL NOTES.

PUBLICATION OF MEDICAL CASES.—The proprietor of a private asylum for the insane at Besangon, was recently mulcted in 500 francs fine and 2,000 francs damages for publishing the clinical history of a patient under her initial letters, and in such a way that her identity was easily recognized. The judges held that a medical man has no right to divulge matters confided to him in the exercise of his professional duties in such a manner as to permit the public to ascertain the identity of the patients.

BRITISH MEDICAL ASSOCIATION.—An excellent programme is announced for the meeting of this Association in Glasgow on August 7, 8, 9, and 10. In the way of amusements there will be excursions to Lanark and Falls of Clyde, Ayr and the Land of Burns, the Perthshire Highlands, Lochearnhead and Crieff, Callander and the Trossachs, Arran, Stirling, Bridge of Allan, and Dunblane Castle, to Rothesage and the Kyles of Bate, and to Loch Lomond.

ENGLISH PHYSICIANS IN SWITZERLAND.—The Swiss government has partly rescinded the order that English and other physicians shall not practice in Switzerland without a Swiss diploma. This is a matter of importance, not only for Switzerland, but for those that are in the habit of visiting, whether for health or recreation, "the playground of Europe."

LONGEVITY IN JAPAN.—Japan had, on January 1st, 1888, 38,507,177 people. Of these 1,085,001 were between 70 and 80 years old; 247,055 between 80 and 90; 12,220 between 90 and 100, and 97 over 100 years. Of the last there were 73

women and 24 men, two of the women being 109, and one 111 years old.

JAMBUL.—DR. GEORGE SUTTIE, of Detroit, says in the *British Medical Journal*, that syzygium jambolana and Eugenia jambolana are the same. Jambul has been recommended in diabetes, and the proper name for it, says Dr. Suttie, is Eugenia jambolana.

SUBLIMATE INJECTIONS IN LUPUS.—In a recent number of the *Gazzetta degli Ospitali* DR. TANSINI reports a case of lupus hypertrophicus cured after twelve injections of a .5 to 1 per cent. solutions of corrosive sublimate, which caused no local nor constitutional irritation.

THE KENTUCKY STATE MEDICAL SOCIETY will hold its thirty-ninth annual meeting at Crab Orchard Springs, July 11, 12, and 13, 1888. A full and interesting programme has been prepared.

THE LOMBARD UNIVERSITY of Galesburg, Ill., recently conferred the honorary degree of Master of Arts upon Dr. Homer M. Thomas, of this City.

DR. MARY DURAND, director of the *Courrier Médical*, has been appointed member of the Commission of Public Hygiene and Health of Paris.

THE SOCIETY OF OBSTETRICS AND GYNECOLOGY OF VIENNA has been recently formed, under the Presidency of Breisky.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May, 23, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D., IN THE CHAIR.

DR. A. JACOBI, of New York, read a paper on

THERAPEUTICS OF DIPHTHERIA.

Diphtheria is a contagious disease. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases. What has been called follicular amygdalitis (or "tonsilitis") is diphtheria in many, perhaps most, instances. It is seldom dangerous to the patient. But the diphtheritic variety of follicular amygdalitis also is contagious. This mild variety is that from which adults are apt to suffer. It made me proclaim the warning that there is as much diphtheria out of doors as there is indoors; as much out of bed as in bed. With this variety the adult is in the street, in business, in the school-room, in the railroad car, in the kitchen and nursery. With this variety, parents while complaining of a slightly sore throat, kiss their children. Wherever it is suspected it ought to be looked after. Where it is seen it ought to be isolated and treated, less perhaps for the sake of those who are sick, than of those who are in serious danger of being infected. This is the more necessary as this form is apt to last long and give rise to repeated attacks. But it is not only the mild variety which is liable to last long. Serious, undoubted cases are also apt to last for weeks, and some of them months. As long as they do persist they are contagious.

Those sick with diphtheria, severe or mild, must be isolated. If barely possible, the other children ought to be removed from the house. This can but rarely be done in the homes of the poor, in the densely populated districts. A great charity is still waiting for its consummation, viz., that of erecting buildings, dormitories and playrooms for those who should be temporarily exiled from their infected homes. The erection of a sufficient number of temporary homes would be a still greater blessing to the poor, and a greater protection to the public at large. If it be impossible to send the well children away, let them remain outside the house, in the air, as long as feasible, and with open bedroom windows during the night, in the most distant part of the house; during the winter in a lower floor. Their throats must be examined every day, and their rectal temperatures taken by the mother so that the physician may be called on the occurrence of but slight changes. The few minutes spent in this way are amply repaid by the safety they may accomplish. The attendants upon cases of diphtheria must have no intercourse with the well children; though a brief visit of the physician may not render him sick or dangerous to others, a long exposure affects him or a nurse to a greater or less degree.

The well children of a family in which there is diphtheria must not go to school or church. Schools must be closed when a number of pupils have been attacked; or better still, when there is an epidemic, though it may not yet have affected the school children to a great extent; the teachers ought to be taught how to examine throats, and directed to do so every morning, and send home those children who are suspected.

When an attack of diphtheria has made its appearance the hygienic condition of the house should be examined. A family with children ought to insist upon the occasional inspection of the throats of their servants; those with chronic pharyngeal catarrh must not be hired. A seamstress or laundress coming for an occasional day's work, sick nurses, children's nurses, and cooks, should be examined from time to time, the more

so the more such people are inclined to conceal slight troubles, for obvious reasons. In times of an epidemic every public place, theatre, ball-room, dining-hall and tavern should be treated like a hospital. Where there is a large conflux of people there are certainly many who carry the disease. Disinfection ought to be enforced at regular intervals. In this respect I can but repeat what I said in my treatise (p. 172) and Pepper's *Cyclopœdia* (I, 697). Public vehicles must be treated in the same manner after a suspicious case has been carried; that it should be so when a case of smallpox has happened to be conveyed in them appears quite natural. Livery stable keepers who would be anxious to destroy the germ of smallpox in their coaches must learn that diphtheria is as dangerous a passenger as variola, and what is correct in the case of a poor hack is more so in a railroad car, whether emigrant or Pullman.

To what extent the infecting sustance may cling to surroundings is best shown by the cases of diphtheria springing up in premises that had not seeen dipptheria for a long time, but had not been interfered with, and best, perhaps, by a series of observations of auto-infection. When a diphtheritic case has been in a room for some time, the room, bedding, curtains, and carpets, are infected. The child is getting better, has a new attack, may again improve, and is again stricken down. Thus I have seen them die; but also improve immediately after being removed from that room or house. If barely possible, a child with diphtheria ought to change its room and bed every few days.

To other rules of protection and disinfection, both private and public, including the prohibition of public funerals, I allude, only for the purpose of referring to the admirable rules published in its *Bulletin* No. 10, of Sept. 6, 1879, by the National board of health, and copied in my treatise on diphtheria, New York, 1880, and my article on diphtheria in Pepper's *System of Practical Medicine*, vol. i., p. 698.|

Diphtheria will, as a rule, not attack a healthy integument, be this cutis or mucous membrane. The best preventive is, therefore, to keep the mucous membrane in a healthy condition. Catarrh of the mouth, pharynx, and nose must be treated in time. Many a chronic nasal catarrh, with big glands around the neck, require sometimes but two or three regular salt water injections (1 : 130) into the nose, if the children be large enough to do so. The addition of one per cent. of alum will often be found useful. This treatment however must be continued for many months, and may require years. The nasal spray of a solution of nitrate of silver, 1 : 500 or 1000, will accelerate the cure. The internal administration of the tincture of pimpinella saxifraga is an efficient remedy in subacute and chronic pharyngitis and laryngitis. I generally give it to adults, diluted with equal parts of glycerine and water, a teaspoonful of the mixture every two or three hours, with the proviso that no water must be taken soon after.

Large tonsils must be resected in times when there is no diphtheria. During an epidemic every wound in the mouth is liable to become diphtheritic within a day, and such operations should be postponed if feasible. Scooping of the tonsils, for whatever cause, I have given up since I became better acquainted with the use, under cocaine, of the galvano-cautery. From one to four applications to each side, or to the post-nasal space, are usually sufficient for every case of enlarged tonsils or lacunar amygdalitis. It is advisable to cauterize but one side at a time, to avoid inconvenience in swallowing afterward, and to burn from the surface inward. Cauterization of the center of the tonsils may result in swelling, pain, and suppuration, unless the cautery is carried entirely to the surface; that means to say the scurf must be on, or extend to, the surface. Another precaution is to apply the burner cold, and heat it *in situ*. Nasal catarrh and proliferation of the mucous and submucous tissue may require the same treatment, but in my experience the cases which require it, are less frequent than those in which the tonsils need correction.

The presence of glandular swellings around the neck must not be tolerated. They, and the oral and mucous membranes, affect each other mutually. Most of them could be avoided, if every eczema of the head and face, every stomatitis and rhinitis resulting from uncleanliness, combustion, injury, or whatever cause were relieved at once. A careful supervision of that kind would prevent many a case of diphtheria, glandular suppuration, deformity or phthisis.

For its salutatory effect on the mucous membrane of the mouth, chlorate of potassium, or sodium, which is still claimed by some to be a specific, or almost so, is counted by me amongst the preventative remedies. If it be anything more, it is in a case of diphtheria an adjuvant. It exhibits its best effects in the catarrhal and ulcerous condition of the oral cavity. In diphtheria it keeps the mucous membrane in a healthy condition or restores it to health. Thus it prevents the diphtheritic process from spreading.

Diphtheria is seldom observed on healthy, or apparently healthy, tissue. The pseudo-membrane is mostly surrounded by a sore, hyperæmic, œdematous mucous membrane. Indeed, this hyperæmia precedes the appearance of the diphtheritic exudation in almost every case. Many cases of throat disease occurring during an epidemic of diphtheria, are but those of pharyngitis, which under favorable circumstances may develop into diphtheria. These throat diseases are so very frequent during the reign of an epidemic, that in my first paper on diphtheria (Aug. 11 and 18, 1860,

Amer. Med. Times) I based my reasoning on 200 cases of genuine diphtheria, and 185 of pharyngitis, without a visible membrane.

These cases of pharyngitis, and such of stomatitis and pharyngitis accompanying the presence of membranes, are benefited by the local and general effect of chlorate of potassium. The surrounding parts being healthy or returning to health, the membrane remains circumscribed. The generally benign character of purely tonsillar diphtheria, which is apt to run its full course in from four to six days, has in this manner contributed to secure to chlorate of potassium the reputation of being a ready, *the*, remedy in diphtheria. The dose of the salt must not be larger than 15 grains (1 gram) for an infant a year old, not over 20 or 30 (1.5–2.0) for a child from three to five years, in the twenty-four hours. An adult must not take more than 1½ drachms (6 grams) daily. These amounts must not be given in a few large doses, but in repeated doses and short intervals. A solution of one part in sixty will allow a teaspoonful every hour, or half a teaspoonful every half hour in the case of a baby one or two years old.

There is no better proof of the non-existence of a specific in diphtheria than the fact that the pharmacopœia has been exhausted to find one, and new remedies, legitimate and illegitimate, are being recommended all the time as panaceas. While there are certain indications resulting from the characteristics common to all, every case of diphtheria must be treated on general principles, which must be applied to the prominent individual features. When there is a high temperature in the beginning, it requires all the tact of a good physician to judge of the advisability of reducing it by antifebriles, such as sponging, warm bathing, cold bathing, antipyrin, antifebrin, or the subcutaneous use of the carbamide of quinia. Convulsions may demand active treatment, such as chloroform inhalations, or chloral hydrate, internally or in the rectum. Vomiting, or other cerebral symptons, may ask for liquids, or smaller or larger doses of opiates. A very quick and feeble pulse may require a few large doses of a heart stimulant, digitalis, strophanthus, or sparteín in the very beginning.

Renal complications are frequent and occur early. The majority of cases terminate favorably, in some a large amount of albumin will be eliminated in the course of a few days and disappear shortly. But whether your individual case will be of that nature, you do not know, and in time of danger nothing must be taken for granted. Milk or farinaceous diet, plenty of water, or, better, Poland, Bethesda, Seltzer, Apollinaris, or Vichy, warm bathing, warm feet, a few good doses of calomel, a number of hourly or two-hourly small doses of opium which are better than those of digitalis, and nitro-glycerine, will often prove beneficial. If a diffuse nephritis, such as is more frequently met with in scarlatina, be the result it impairs the prognosis and requires further treatment conducted on general principles.

To what extent local treatment, if it be possible to employ it, is effective, can best be seen on external diptheritic surfaces, thus the cutis denuded by vesicatories, the inguinal regions sore with intertrigo, the vagina, circumcision wounds, or tracheal incisions. For these conditions, I am most pleased with the effect of iodol, or iodoform powdered, or one part with eight or ten of vaseline. Powders of subnitrate of bismuth, boric acid, or salicylic acid with fifteen or twenty-five its quantity of starch have not given me the same satisfaction.

The treatment of diphtheritic conjunctivitus requires nothing but local treatment. It consists in the application of small ice-bags, or iced cloths which must be changed every few minutes, and the frequent installation of a saturated solution of boric acid, with or without atropia.

The local treatment of the pseudo-membranes of the fauces is a subject of great importance. To look upon them as an excretion which needs no interference, is incorrect. If it were possible to remove or destroy them, it would be a great comfort; but they can be reached only in certain places, and just in those in which they do least harm. Pseudo-membranes on the tonsils are the least dangerous, for their lymph communication with the rest of the body is very scanty. Thus almost all forms of tonsillar diphtheria are amongst the most benign, at least as long as the process does not extend. Most cases of the kind run their mild course in from five to seven days, and it is just these that have given rise to the many proposals of tearing, scratching, cauteriz ing, swabbing, brushing, and burning.

The fact is that neither the galvano-cautery nor carbolic acid, nor tannin and glycerine, nor perchloride or subsulphate of iron can be applied with leisure and accuracy to the very membrane alone except in the cases of very docile and very patient children. In almost every case the surrounding epithelium is getting scratched off or changed and thus the diphtheritic deposit will spread. Besides, the membrane of the tonsil is changed surface tissue, as it always is wherever the epithelium is pavement, and not deposited upon the mucous membranes from which it might be easily detached. Whatever is done must be accomplished without violence of any kind. If nasal injections be found advisable they can be made to wash the posterior pharynx and the tonsils sufficiently, so as to render the special treatment directed to the throat absolutely useless. Besides, it is easier, and meets with less objection, and gives rise to less exhaustion than the forcible opening of the mouth. Were it possible to make local applications without difficulty, the

membrane may be brushed with tincture of iodine several times daily, or a drop of rather concentrated carbolic acid. Of powders I know only one, the application of which is not contraindicated, viz. calomel. Even this may irritate by its very form. Everything dry irritates and gives rise to cough or discomfort. Whatever has, besides, a bad taste or odor, such as sulphur, iodoform, or quinia, must be abhorred.

For the purpose of dissolving membranes papayotin, or papain, has been employed. It is soluble in twenty parts of water, and may be injected sprayed, or brushed on. I have used it in greater concentration, in two or four parts of water and glycerine, in the nose, throat, and through the tracheotomy tube, in the trachea. For the same purpose trypsin is preferred by others. The mode of its application is the reverse of indifferent. I have seen papayotin applied in powder, which resulted in the constant irritation of the throat while the patient otherwise was convalescent. The pharyngeal hyperæmia and slight exudation disappeared when mild alum washes were substituted.

Steam. Its inhalation is useful in catarrh of the mucous membranes, and in many inflammatory and diphtheritic affections. On mucous membranes it will increase the secretion and liquefy it, and thus aid in the throwing off of the pseudo-membranes. Its action is the more pronounced the greater the amount of muciparous follicles under or alongside a cylindrical or fimbriated epithelium. Thus it is that tracheo-bronchial diphtheria, so-called fibrinous bronchitis, is greatly benefited by it. Children affected with it I have kept in small bath rooms for days, turning on the hot water, and obliging the patient constantly to breathe the hot clouds. Several such cases I have seen recover with that treatment. Atomized *cold* water will never yield the same result. Nor have I seen the patent inhalers do much good. Where the surface epithelium is pavement rather than cylindrical, and but few muciparous follicles are present, and the pseudo-membrane is rather immerged in, and firmly coherent with, the surface—for instance on the tonsils and the vocal cords—the steam treatment is less appropriate. Moist heat in such cases is likely to favor the extension of the process by softening the hitherto healthy mucous membrane. It takes all the tact of the practitioner to select the proper cases for the administration of steam, not to speak of the judgment required to determine to what extent the expulsion of air from the steam moistened room or tent is permissible.

Steam can properly be mixed with medical vapors. In the room of the patient water is kept boiling constantly, over the fire place, provided the steam is prevented from escaping directly into the chimney, on a stove (the modern self-feeders are insufficient for that purpose, and abominations for every reason), over an alcohol lamp if we cannot do better, not on gas if possible, because of the large amount of oxygen which it consumes. Every hour a teaspoonful of oleum terebinthinæ, and perhaps also a teaspoonful of carbolic acid, is poured on the water and evaporated. The air of the room is filled with steam and vapors, and the contact with the sore surfaces and the respiratory tract is obtained with absolute certainty.

The secretion of the mucous membranes is sometimes quite abundant under the influence of steam, but still, like that of the external integuments, increased by the introduction of water into the circulation. Therefore, drinking of large quantities of water, or water mixed with an alcoholic stimulant, must be encouraged. Over a thoroughly moistened mucous membrane the pseudo-membrane is more easily made to float, and macerate. It was for this purpose that pilocarpine, or jaborandi, was highly recommended. Guttmann recommended it as a panacea in all forms of diphtheria. There is no doubt that the secretion of the mucous membrane is vastly increased by its internal application, and by repeated subcutaneous injections of the muriate or nitrate of the alkaloid, but the heart is enfeebled by its use. I have seen but few cases in which I could continue the treatment for a sufficient time. In many I had to stop it because after some days of persistent administration I feared for the safety of the patients. There will be but exceptional cases in which pilocarpine will be tolerated long enough to do good. It is one of the remedies by which we may cure our case and kill our patient.

Diphtheria of the nose is apt to terminate fatally unless energetic treatment is commenced at once. This consists in persevering disinfection of the mucous surface. The disinfecting procedure must not be omitted long because of the general sepsis resulting from rapid absorption from the surface which is supplied with lymph ducts, and small superficial bloodvessels to an unusual extent. Disinfectant injections must be continued every hour, for one or more days. If they are well made, the consecutive adenitis, particularly that about the angles of the lower jaw, is soon relieved and the general condition improved. But there are cases in which not the lymph bodies are the main gates through which constitutional poisoning takes place, but the bloodvessels only. In the incipient stage of such cases the discharge from the nostrils is more or less sanguineous; in them the bloodvessels, thin and fragile, carry the poison inward with great rapidity.

Injections are unsuccessful in cases in which the whole nasal cavity is filled with membranous deposits to such an extent as to require forcible treatment. Sometimes it is difficult to push a silver probe through it. That procedure may be re-

peated, the probe dipped in carbolic acid, or wrapped in absorbent cotton moistened with carbolic acid of 50 or 90 per cent. After a while injections alone will suffice. But now and then the development of pseudo-membranes is very rapid, a few hours suffice to block the nostrils again, and the difficulty is the same.

The liquids to be injected must be warm and fairly mild. Solutions of chloride of sodium, 0.66 per cent., saturated solutions of boric acid, 1 part of sublimat., 35 of chloride of sodium and 5,000 of water, more or less, or lime water, or solutions of papayotin, will be found satisfactory. The object in view is partly that of washing out, and partly of disinfecting. Carbolic acid may be used in solutions of 1 per cent. or less. Its use requires care, for much of the injected fluid is swallowed, and proves a danger to children of any age, but mostly to the young.

The nozzle of the syringe must be large, blunt and soft. I now use always a short stout glass syringe with soft rubber mounting in front.

When the children cannot or must not be raised, I employ the same solutions from a spoon, or a plain Davidson atomizer. These applications can be made while the children are lying down, every hour or very much oftener, without any or much annoyance. The nozzle must be large so as to fit the nostril. A single spray on each side will generally suffice. I am in the habit of covering the common nozzle with a short piece of India-rubber tubing.

For a day or two these injections of fluids or spray must be made hourly. It is not cruel to wake the children out of their septic drowsiness; it is certain death not to do it.

Injections of the nose are oftener ordered than judiciously made. Hundreds of times have I been assured that they had been made regularly, hourly, for days in succession. Still there was a steady increase of glandular swelling and sepsis. I never believe a nurse to have made them regularly unless I have seen her doing it. They *will* run up their syringe vertically and not horizontally, the fluid *will* return though the same nostril. On the successful injecting or spraying of the nares hangs every life in a case of nasal diphtheria. I have long learned to look upon a neglect to tell at every visit how to make an injection as a dereliction of duty. This may appear a trifling way, but it is a safe one. The nurse must be made to tell you that at every injection the fluid returns through the other nostril, or through the mouth, or is swallowed. The procedure is simple enough, and need not take more than half a minute for both nostrils. A towel is thrown over the child's chest up to the chin and the child gently raised in bed by the person who is to make the injection. This person, sitting on the bed, steadies the patient's head against her chest while somebody else holds the patient's hands. The syringe is introduced horizontally by the person sitting behind the patient and gently emptied. No time must be lost in refilling and attending to the other side. When pain is complained of in the ears more gentleness is required, or the spray, or pouring in from a spoon, or minim dropper even, has to take the place of the injection. Many sins are committed in even doing this simple thing. The unfortunate little one is made to see all the preparations and is worried and excited, and the necessary gentleness in the proceedings is neglected.

Which is the concentration in which antiseptic injections should be used? For twenty-five years and more, while employing irrigations and injections frequently, I had used quite weak solutions and felt assured of their efficacy. In the *American Journal of the Medical Sciences* for January, 1881, T. Mitchell Prudden proved that a solution of $\frac{1}{16}$ of 1 per cent. of carbolic acid prevents the emigration of white blood-corpuscles under circumstances otherwise favorable to inflammation, and Koch found that, though bacteria are not easily killed, their growth is stopped by a solution of 1 part of carbolic acid in 850, and their activity by one in 1,200. These effects are all that is required for practical purposes; thus the frequency of applications is justified by both necessity and safety.

Diphtheritic adenitis, the swelling of the cervical glands near the angles of the lower jaw, to which I have alluded as an ominous symptom, points to nasal and naso-pharyngeal infection. The treatment consists in disinfection of the absorbing surfaces. Direct local treatment of the glands, if not entirely useless, is, at all events, of minor importance and efficiency. Applications of 1 part of carbolic acid to 10 of alcohol irritate both surface and patient more than they can do good. Inunctions may do some good by friction (massage); inunctions with some absorbable material in them may do a little better. After all, however, the readiest method of reducing the swelling of the glands and improving the prognosis accordingly, is that of cleansing and disinfecting the field of absorption. The rare cases of suppuration in these glands require incision and disinfection. They are as ominous as rare, however. There is but little pus, as a rule, but one or many local deposits of disintegrated gland cells and gangrenous connective tissue. The incisions must be extensive, the scoop and concentrated carbolic acid must be freely used. In these cases hæmorrhages may occur, some of them very difficult to manage. I have seen some of them terminate fatally. In these carbolic acid must be avoided. Compression, actual cautery, and acupressure, have rendered good service. Solutions of iron must be avoided, for the scurf formed is a shield behind which deleterious absorption is going on constantly in such wounds, as it does in the uterus.

Besides sepsis, the great dangers in diphtheria are heart-failure and strangulation. The latter has its own indication, to which I shall not now allude. Heart-failure exhibits itself sometimes quite suddenly, but, as a rule, it is foreshadowed by a gradually increasing frequency, weakness of heart-beats and pulse and the equal length of the intervals between the feeble systole and diastole, and diastole and systole. This equality is always a dangerous symptom. Heart-failure is due, besides the influences common to every disease and every fever, to myocardial changes. These may depend on the influence of the septic decomposition of the blood, and the ill nutrition of the heart-muscle depending thereon, or the direct diphtheritic changes of the tissue, or both. These changes and dangers set in, sometimes, at a very early period. Thus whatever enfeebles must be avoided. Patients must be spared every unnecessary activity. They must remain in bed, without excitement of any kind, take their meals, and evacuate their bowels in a recumbent or semi-recumbent position; crying and worrying must be avoided; the room kept airy, and rather dark, so as to encourage sleep if the patient be restless. In no disease, except, perhaps, in pneumonia, have I seen more fatal results from sudden changes of posture, or from exertion. Unless absolute rest be enforced, neither physician nor nurse has done his or her duty.

In no disease is the danger greater from the side of the heart, in no disease is the indication for sustaining and strengthening the heart more positive from the very begining. Digitalis, strophanthus, spartein, besides camphor, alcohol, and musk, must not be postponed until feebleness and collapse have set in. It is possible or probable that they will appear; and it is certain that a cardiac stimulant will do no harm. It is safe, and advisable to use them at an early date. That is particularly necessary when antipyrin or antifebrin is given. A few grains of digitalis, in a palatable and digestible form, may, or must, be given daily. When a speedy effect is required, one or two doses of from two to four grains are not too large, and must be followed by smaller ones. When it is justly feared that the effect of digitalis may be too slow, I give, with or without the former, sulphate of spartein. An infant a year old will take one-tenth of a grain four times a day, as a matter of precaution, and every hour or every two hours in an emergency.

Of at least the same importance as cardiac tonics are alcoholic stimulants. The advice to wait for positive symptoms of heart failure and collapse before the life-saving apparatus is employed, is bad. There are cases that get well without treatment, but we do not know beforehand which they will be. No alleged mild case is safe until it has recovered. When heart failure sets in—and often it will occur in apparently mild cases—our efforts are too often in vain. Thus alcoholic stimulants ought to be given early, and in large quantities, though amply diluted. There is no such thing as intoxication or danger from it, in septic diseases. A few ounces daily may suffice, but I have seen ten ounces of brandy or whisky, save children who had done badly with three and four. Coffee is a good stimulant for the heart. Camphor may be employed to great advantage for the same purpose. From 5 to 25 grs. may be given daily, as camphor water, or in a mucilaginous emulsion, which is easily taken. It does not upset the stomach as ammonium carbonate is liable to do. It may be employed subcutaneously when a rapid effect is aimed at, in five parts of oil, which is milder and more convenient than ether.

But the best internal stimulant, in urgent cases, is Siberian musk, in powders, or with mucilage. When required at all it should be given in sufficient doses, and at short intervals. When ten or fifteen grains administered to a child one or two years old, will not accomplish, within three or four hours, a return of a more satisfactory heart's action, the prognosis is very bad.

Besides exhaustion at the height of the disease, we have paralysis during convalescence, or intense anæmia long after apparent recovery. This anæmia may be general, or is local, and then mostly cerebral. Diphtheritic paralysis, though of different anatomical and histological origin, yields in all cases a certain number of identical therapeutical indications. These are: The sustaining of the strength of the heart by digitalis and other cardiac tonics. A child of 3 years may take daily, for a month, 3 grains or its equivalent; for instance, 1 grain of the extract. This is an indication on which I cannot dwell too much. Many of the acute, and most of the chronic diseases of all ages, do very much better by adding to other medications a regular dose of a cardiac tonic. It is true that it is a good practice to follow the golden rule to prescribe simply, and if possible, a single remedy only, but a better one to prescribe efficiently. A prescription paper with a single line on it looks well, but a really convalescent or well man, looks better.

There are some more indications: Mild preparations of iron, provided the digestive organs are not interfered with. Strychnia or other preparations of nux at all events. In ordinary cases a child of 3 years will take $\frac{1}{60}$ of a grain three or four times a day. Local friction, massage of the throat, of the extremities, and trunk, dry or with hot water, or oil, or water and alcohol; and the use of both the interrupted and continuous currents, according to the known rules, and the locality of the suffering parts, find their ready indications. The paralysis of the respiratory muscles is quite dangerous; the apnœa resulting from it may prove fatal in a short time. In such cases the electrical current used for very short periods,

but very frequently, and hypodermatic injections of sulphate of strychnia in more than text-book doses, and frequently repeated, will render good service. I remembr a case in which these, and the occasional use of an interrupted current, and occasional artificial respiration by Silvester's method, persevered in for the better part of three days, proved effective.

Chloride of Iron.—The chloride of iron is an astringent and antiseptic. Its contact with the diseased surface is as important as is its general effect therefore it must be given frequently, in hourly or half hourly doses, even every twenty or fifteen minutes. An infant of 1 year may take 3 or 4 grams a day, a child of 3 or 5 years 8 or 12. It must be mixed with water to such an extent, that the dose is half or a teaspoonful; ℥j in ℥iv allows half a teaspoonful every twenty minutes. No water must be drank after the medicine. As a rule it is well tolerated. There are some, however, who will not bear it well. Vomiting or diarrhœa is a contraindication to preserving in its use, for nothing must be allowed to occur that reduces strength and vigor. A good adjuvant is glycerine, better than syrups. From 10 to 15 per cent. of the mixture may consist of it. Now and then, but rarely, it is not well tolerated neither. When diarrhœa sets in glycerine must be discontinued. Still these cases are rare; indeed, the stomach bears glycerine very much better than the rectum. In the latter, the presence of a small dose of glycerine is known sometimes to produce large evacuation, a result appropriated and utilized by an advertising nostrum monger.

I have seen so many bad cases to recover with chloride of iron, when treated after the method detailed above, that I cannot rescind former expressions of my belief in its value. Still, I have often been so situated that I had to give it up in peculiar cases. These are such in which the main symptoms are those of intense sepsis, I should say such in which the iron and other rational treatment was not powerful enough to prevent the rapid progress of the disease. Children with naso-pharyngeal diphtheria, large glandular swelling, feeble heart and frequent pulse, thorough sepsis, and irritable stomach besides, those in which large doses only of stimulants, general and cardiac, can possibly promise any relief, are better off without the iron. When the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly. The quantities required are so great that the absorbent powers of the stomach are no longer sufficient for both. Nor is iron sufficient or safe in those cases that are preëminently laryngeal. To rely on iron in membranous croup means waste and danger.

Mercury.—The first volume of *A System of Practical Medicine by American Authors*, which appeared in 1885, contains in an article on diphtheria, written in 1884, the following remarks:

"If ever mercury is expected to do any good in cases of suffocation by membrane, it must be made to act promptly. Within the past few years the internal administration of bichloride of mercury has been resorted to more frequently and with greater success than ever before. My own experience with it has been encouraging, and so has that of some of my friends. Wm. Pepper gave one thirty-second of a grain of corrosive sublimate every two hours in bad form of diphtheritic croup, with a favorable result. But in this very bad case, desperate though it was—child of 5 years, respiration 70, pulse 160—large membrane 'evidently from the larynx' had been expelled before the treatment was commenced on the seventh day of the disease. The solution ought to be given in solution of 1:5000 and in good doses. A baby, a year old, may take one-half grain every day many days in succession, with very little, if any, intestinal disorder, and with no stomatitis. A solution of the corrosive sublimate in water is frequently employed of late as a disinfectant. It acts as such in a dilution of 1 in 20,000. As healthy mucous membrane bear quite well a proportion of 1:2000 or 3000, any strength between these extremes may be utilized. A grain of the sublimate in a pint or more of water, with a dram of table salt, will be found both mild and efficient. As a gargle and nasal injection it will be found equally good. But it has appeared to me that frequent applications give rise to a copious mucous discharge; hourly injections into a diphtheritic vagina become quite obnoxious by such over-secretion, which ceases at once when the injections are discontinued. Thus, when it is desirable not only to disinfect, but also to heal the diseased surface, the injections with corrosive sublimate appear to yield a result inferior to less irritating applications."

These remarks of 1884 constitute what I consider a great progress over the statements of my treatise on diphtheria, 1880, which are more cautious and negative. I am fully prepared to commit myself to the following statements: My conviction of the utter uselessness of internal medication in laryngeal diphtheria, membranous croup, is strongly shaken. The mortality of 90 or 95 per cent. of the cases not operated upon has no longer existed these five or six years, in my observation. The above figures were by no means taken from small numbers. For since 1860 I have tracheotomized more than 500, perhaps 600, times, have assisted in as many more operations, and seen at least a thousand cases of membranous croup that were not operated upon at all. During the last six years I have seen no less than 200 cases, perhaps many more. Amongst them, recoveries have not been rare. In the practice of O'Dwyer, I have seen two cases of general and laryngeal diphtheria in the same family get well

without any operative procedure. Such recoveries have taken place in all ages, from four months upward. The uniform internal medication consisted in the administration of the bichloride of mercury. The smallest daily dose was a gr. 0.25 (15 millig.) Grain 0.5 daily continued through 5 or 6, sometimes 8, 10, or even 12 days, has not been rare amongst children of from 3 to 6 years. the doses varied from gr. $\frac{1}{60}$ to $\frac{1}{40}$, and sometimes more. They are given every hour. They require the dilution in a tablespoonful of water, or other compatible fluid, for instance milk, in order to be quite innocuous. They are not liable to produce gastric or intestinal irritation. When the latter occurred, it was generally found that by some mistake the solution was as strong as 1:2000 or 1:3000. In the few cases in which it did exist, or was believed to result from the remedy, a few minims of camphorated tincture of opium administered with every dose, for a short period, proved sufficient to check it. The beneficial effect of the remedy depends greatly on the time of its administration. As a rule, such complete stenosis as necessitates surgical interference, develops after days only. This necessity is often obviated by the remedy when given as detailed. When an operation is required after all, the treatment must be continued. I have never since 1863 seen so many cases of tracheotomy getting well as between 1882 and 1886, when the bichloride was constantly used as mentioned. Nor am I alone with these observations. I can name a dozen of New York physicians, some of whom have often performed tracheotomy, who can confirm the above statements from their own observations. Nor does the opinion of those differ who constantly perform intubation. I know that O'Dwyer, Dillon Brown, and Huber have come to the same conclusions, the last having been a successful tracheotomist before he earned his laurels with intubation.

My experience in regard to the efficacy of the bichloride of mercury is mainly gathered in cases of fibrinous bronchitis. It is there where it has been particularly effective. Still I must not say that they were localized affections. These, with us, are but very scarce. Our cases of diphtheritic laryngitis are mostly decreasing, and complicated with either diphtheritic pharyngitis, or rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms, sepsis. But cases of that kind also I have seen getting well. After the rational and careful administration of solutions of hydrogyrum bichloride, local mercurial symptoms about gums, mouth, pharynx, and intestines are extraordinarily rare in infancy and childhood.

(*To be concluded.*)

THE DEATH OF DR. J. MILNER FOTHERGILL is announced. Probably few men were more widely known among English-reading physicians.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

Antipyrin Injections in Ocular Therapeutics — Contra-Indications of Antipyrin — Saccharin — Treatment of White Swelling by Electricity.

At a recent meeting of the Academy of Medicine, Dr. Grandelément, of Lyons, read a paper on the utility and the principal indications of *injections of antipyrin in ocular therapeutics*. He found that injections of antipyrin in the temple produced results more rapid and more certain than the administration of this substance by the stomach. It was only in exceptional cases that the author had occasion to associate the two modes of absorption.

Secondly we noticed, that when the injections should be useful and efficacious, improvement takes place from the first injection, in that case four or five injections ordinarily suffice to obtain all that can be expected of this substance. Dr. Grandelément stated that he had thus practiced more than 300 injections, in doses of 25 centigrams of antipyrin in 10 drops of distilled water with half a centigram of antipyrin in 10 drops of distilled water with half a centigrame of the hydroclorate of cocaine. The author never observed any abscess resulting, but there has always been produced in the injected region a slight swelling which lasted from six to eight days, and extended at times in the form of œdema to the lower lid. He thought that when the injections were efficacious, a good part of this efficacy is probably due to a sort of subcutaneous revulsion with analgesia of the skin at the part injected. The author concludes his paper with the following indications for these injections: 1. When pain is the principal element, particularly when it is not peri-orbital. 2. When the spasmodic element exists. 3. These injections favorably modify the greater part of the inflammatory processes of the globe of the eye, particularly if they are accompanied by ciliary pains. Moreover, their favorable action on the progress of the inflammation is the more evident in proportion as the pain is more acute.

At a discussion on the medicinal properties of antipyrin, Dr. Huchard brought to notice, at a recent meeting of the Société de Thérapeutique, the contra-indications of that substance, which is so much in vogue. He said that the drug should be used sparingly in diseases such as typhoid fever, in which the kidneys served as emunctories, as it diminished the secretion of urine. With this effect in view, he gave 8 grams a day to a woman suffering from meningo-myelitis, who passed from 24 to 28 litres in 24 hours. This quantity was reduced to 5 litres under the influence of antipyrin. The author, therefore, suggested the use of this drug in analogous cases,

such as diabetes, for instance. When the kidneys are, however, diseased, antipyrin should no more be given than opium or the salicylate of soda, as in such cases, these substances being eliminated by the kidneys, might possibly be absorbed into the organism with toxic effects. Dr. Dujardin-Beaumetz and others confirmed this view, and related cases in which the urine of diabetic patients was notably diminished under the influence of antipyrin and a corresponding diminution of the sugar took place. As antipyrin sometimes causes disturbance of the stomach, Dr. Constantin Paul recommended the addition to it of the bicarbonate of soda. To the contra-indications, Dr. Huchard added that arterio-sclerosis should not be treated by antipyrin even when the kidneys are not affected. Some medical men thought that they had found in antipyrin a powerful hæmostatic, but after experimenting with it they found that it acted as such only when externally employed. In this latter case it proved most efficacious, and it was found that it also possessed most powerful antiseptic properties. It may be used in the form of a solution 1 to 20 parts or in powder, when it also relieves pain.

Saccharine is another substance that is becoming much in vogue, although for the present it is not much used as a medicinal agent. At a debate at the Société de Thérapeutique, Dr. Dujardin-Beaumetz extolled the advantages of this substance as a substitute for sugar in the alimentation of diabetic patients. The author stated that from his experience it was very much appreciated by these patients, as with it they enjoyed the sweet savor of sugar without having any of the inconveniences of the latter. It is preferred to glycerine, which has hitherto been the substitute for sugar. Some of the members present remarked that its use was being largely extended to industrial purposes, such as the manufacture of preserves and syrups for which glucose, often of an inferior quality, is employed. Dr. Dujardin-Beaumetz, however, thought that saccharin may safely be employed, as it had no noxious action on the system, but that nevertheless it is not, like sugar, an aliment, as it traverses the economy and is eliminated by the urine without being assimilated or transformed.

In a very interesting work by Dr. Léon Dannion on the *Treatment of White Swelling by Electricity*, the author summarizes as follows his conclusions on this mode of treatment which he has adapted for several years: 1. The results obtained till now by electricity applied to white tumors in full evolution, with or without fistulous tracts, show: (a) that it can arrest its progress; (b) that it can determine a regression of the fungous development; (c) that the part comprised might recuperate at least partially and sometimes to a great extent its integrity and its functions. 2. Although one can always gainsay the sense of the ulterior evolution of an arthropathy, the power of electricity to check the progress of a white swelling at its origin seems undeniable. In any case the excellent effects produced by it in arthritis, whatever be its origin, it should be employed as a preventive means to all arthropathies in general, or at least to those of a suspicious nature. 3. The therapeutic power of electricity is due to its special antiphlogistic and entrophic property, that it acquires from the intimate relation which exists between the human electrogeny and the nervous function. A. B.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Ozone Treatment of Phthisis—Disposal of Sewage—Saline Aperients and Diet in Dysentery Electrolysis in Gynecological Practice—Death of Dr. T. Harrington Tuke—Sir Andrew Clark.

The following was the experience of a well known medical man with the new remedy ozone, for consumption. The patient was a young lady far advanced in the disease. The symptoms were a hacking cough, almost entire loss of appetite and sleep, and not strength enough to walk across the room. Before using the remedy, the case was described to Dr. B. W. Richardson, who in the kindest manner advised as to the strength and duration of the inhalations. The oxygen was obtained from chlorate of potash in the ordinary way. In converting it into ozone the method was that recommended by Dr. Richardson, in which the proportion of ozone to atmospheric air was one in five, and this quantity was indicated by a divided scale on the side of a small gasometer which served for the inhaler. The patient had been under treatment for a month, and to quote the words of the medical attendant, "The effect was marvellous." The appetite is gained, the sleep calm and refreshing and altogether there seemed a very good prospect of recovery. It was anticipated that the inhalations would be followed by feverishness, or at least by an increase of temperature, but strange to say the clinical thermometer registered on the average 1.5° F. lower after the inhalations, which lasted fifteen minutes each. Dr. W. B. Richardson considers the ozone treatment as especially applicable to all germ diseases.

There has just been published as one of the "Professional Papers of the Corps of Royal Engineers" an interesting contribution to the important problem of how to dispose of the sewage of great towns. The treatment is alleged to occasion at once a chemical change by which the putrescible matter is destroyed as such matter and resolved into innocuous elements, and it is further alleged that this complete annihilation of dangerous products may take place either in the

public sewers or in each house without any change in the existing system of drainage and at trivial expense. The discovery is based upon the well known fact that water filtered through finely divided iron is purified. On the basis of these facts there was carried out a series of experiments whose result is the present discovery. There is produced by various chemical processes a liquid solution of iron of fixed strength. This iron liquor is introduced into the sewage in a quantity proportionate to the amount of putrescible matters believed to be present there, and the assertion is that it immediately dissolves these matters into their elements and that the fluid in the drain becomes clear water. For the purification of sewers the plan adopted is to place the iron liquor in a perforated porcelain cylinder, which is placed in a tank that receives a regulated supply of pure water. The iron liquor in the cylinder is taken up by the pure water at a known and easily calculable rate and thus charged with iron; the water escapes by an overflow pipe into the sewer.

In the town of Guildford, a ten-gallon tank was fixed and supplied with water from the town water-works, at the rate of fifteen gallons per hour. The disinfectant was placed in the tank and an overflow pipe was led from it into the adjacent sewer. The rate of solution was about 1,400 grs. of sulphate per hour. The apparatus was set at work at 2.40 per hour on Nov. 18, 1885. It was anticipated that several days would elapse before any decided change took place in the purity of the sewage and samples were taken every twelve hours. On the 19th of November, to the surprise of every one concerned, a clear stream free from any taint, was seen in using from the outfall, and the smell which had been extremely offensive, had cleared. It is not concluded that this clear water is fit for the purposes that clear water is usually applied to, but it is alleged to be quite innocuous and to effect no perceptible change in the water of the rivers into which it may run. For the application to single houses the process requires only one or more small instruments which the inventor calls ferrometers and each of which will contain three pounds of iron solution, whose use can be regulated by simple working parts. The cost of the treatment is said to be very slight as compared to those now in use. Ferrometers have been adopted at Windsor Castle and are stated to be giving entire satisfaction.

Surgeon Nichols, of the Army medical staff, recommends a prolonged course of saline aperients, along with a nutritious, easily digested diet, in cases of chronic dysentery and its allies. In cases where the chronic is a sequel to a more or less recent acute attack, the disease is more obstinate and the treatment requires to be persevered in long after apparent recovery.

Dr. W. G. Steavenson, the well-known physician of St. Bartholomew's Hospital, read a paper before the Obstetrical Society, devoted to advocating a more exclusive use of electrolysis in gynœcological practice. He pointed out that this property of electricity was especially useful in the treatment of affections in parts difficult of access, and perhaps found its widest field for usefulness in the treatment of those diseases of women in which local applications were necessary. It was a more efficient and elegant way of applying caustic than any other. It could be most accurately localized, the amount used and the extent of tissue to be destroyed could be regulated, and the action could be commenced and arrested at any moment at the will of the operator.

Dr. T. Harrington Tuke, the well-known authority on insanity and general diseases of the brain, died on the 9th of last month. He was a member of several professional societies, and was formerly well known at the annual meetings of the British Medical Association.

Sir Andrew Clark is reported to have once made the remark: "I worked twelve years for bread, twelve years for butter, and twelve more for the luxuries of life." Sir Andrew, the other day, received a fee of £5,000 for going to Italy. Sir Andrew Clark's first acquaintance with Mr. Gladstone arose in connection with his visits as Mr. Clark to Mr. Gladstone's Convalescent Home, since when they have been great personal friends. He is stated to have been one of the first to adopt the now general plan of writing out elaborate dietaries for his patients. G. O. M.

DOMESTIC CORRESPONDENCE.

MONUMENTS TO MEDICAL PATRIOTS.

Dear Sir: The members of the profession of medicine in the United States will do well to read the following paragraph from the London *Lancet* of May 12:

"At Milan on the 30th ult., a statue in bronze, the work of the great sculptor, Vela, was erected to AGOSTINO BERTANI, who as surgeon, medical legislator, and patriot deserved so well of Italy. Statesmen of every political school were present at the ceremony, and the Syndic of Milan, the Senator Negri, dwelt in a strain of hearty unaffected eloquence on the high aims, the pure philanthropy, and the scientific grasp of the man they commemorated. To sacrifice a brilliant professional career in order to act as medical head to the army of independence under Garibaldi; to keep abreast of the professional scholarship and practice of the day while tending the sick and wounded of the Italian 'Risorgiments;' to dedicate the evening of a stormy existence to the moulding and maturing of a great body of sani-

tary regulations tending to lighten and lengthen the lives which he helped to civic freedom—such was the peculiar merit of Bertani. He lived just long enough to complete his Hygienic Code, bequeathing the exposition and indication of its articles to his political friends; and it was a happy coincidence that scarcely was Vela's fine presentation of his stoic figure and keenly intellectual countenance unveiled when the Italian Senate put its seal of approval to his 'Codice Sanitario.'"

Nor is this the only honor shown the name of the surgeon and sanitarian of the Italian Revolution. According to the *Lancet* of May 19, "A tablet has just been unveiled to his memory on the façade of that house in Genoa where he planned and set in motion the most brilliant of all Garibaldi's expeditions—that of the "Mille" or "Thomard," which added the two Societies to Italian unity. The following is a translation of the inscription: "Agostino Bertani, exile in Genoa from Lombardy, lived here nobly employed in the advancement of science and in the service of patriotism from 1853 to 1866. True to all the high-souled undertakings whence the new Italy took breath and form, in this house he endued with life and impulse, and from this house he launched the memorable organizing committee which aroused and inspired the armed thousand on their path of progress, with Garibaldi for their leader, from Marsala to the Volturno. Sacred be the walls in which so great a history resides."

Since Italy has so promptly and conspicuously honored its patriot physician, it appears anything but creditable that American medical men should hesitate to carry into effect, without another year of delay, the projected monument to that greatest of patriot physicians, BENJAMIN RUSH.

In my recent report to the American Medical Association, as Chairman of the Rush Monument Committee, published in THE JOURNAL of June 2, I quoted the example of the State Medical Society of California, which, at its annual meeting on the 18th of April, having taken a recess for the purpose, contributed $106 toward the monument, that sum being the equivalent of the number of members in attendance. I was disappointed that the twelve hundred and more members of the American Medical Association in attendance at Cincinnati did not likewise contribute $1200 to the project which the Association has so often commended and endorsed; and I now beg most earnestly to renew the appeal made in that report that every medical man and woman, on reading this statement, will at once inclose his and her subscription to the Treasurer of the Monument Fund, Dr. Joseph M. Toner, at 615 Louisiana Avenue, Washington, D. C., and that every one so doing will further personally interest himself, and herself, in obtaining a similar subscription from each friend and acquaintance in the ranks of the profession in his or her neighborhood.

The Committee have entertained the hope that the *one hundred thousand* members of the profession of Medicine in the United States would contribute *at least* $50,000 towards erecting a monument to this "greatest American physician" who has ever lived, on the Mall at Washington at the approach to the new Army Medical Library and Museum, which would be worthy of the man commemorated, in keeping with the splendid medical edifice there erected, and creditable to the profession in America. The Congress of the United States will, undoubtedly, as in other instances, contribute a handsome pedestal for the monument, and it will be a subject of mortification, instead of pride, if the figure surmounting it should be an insignificant one through the negligence or indifference of the physicians of the country. I beg, therefore, on behalf of the committee to make this last appeal to every reader of THE JOURNAL to mail *at once* his one dollar subscription, or his larger donation, to the Treasurer and to actively interest himself in obtaining a similar subscription or donation from all his professional neighbors and acquaintances.

Very respectfully, etc.,

ALBERT L. GIHON, M.D.,
Chairman of Rush Monument Committee.

ACUTE RHEUMATISM IN A CHILD TWO MONTHS OLD.

Dear Sir:—In a recent issue of THE JOURNAL I notice the report of a case of acute rheumatism seen in a child only 11 days old.

This calls to mind a case that I saw during the month of April of this year—the child being *two months* old. I mistook the complaint, the first thirty-six hours, as being one of intestinal trouble, and so attributed the child's crying and fret to that cause. On a subsequent (third) visit, my attention was called to the child's swollen and red left shoulder, and that it would not permit the slightest movement of that arm without crying. Of course there was a complete change in the treatment. I had the arm and side bathed freely several times a day with wintergreen oil, preferring to give the salicylic acid in that form. The little patient showed signs of improvement in twenty-four hours, combined with an internal alkaline treatment, and ⅛-drop doses of the tincture of aconite root. The swelling attacked, as it left the shoulder, both wrists, and the hands looked like miniature puff-balls, though the fever and pain steadily lessened until, by the end of four days more, the patient was discharged.

This is the only case of rheumatism that I have seen in a patient under 1 year of age; neither have I heard of one, from my *confrères*, in an infant so young. Yours very truly,

C. HENRI LEONARD, M.D.

Detroit, Mich., June 20, 1888.

BOOK REVIEWS.

LESIONS OF THE VAGINA AND PELVIC FLOOR, with special reference to Uterine and Vaginal Prolapse. By B. E. HADRA, M.D., of Austin, Texas. With 83 illustrations. 8vo, pp. 329. Philadelphia: Records, McMullin & Co. Chicago: W. T. Keener.

This volume may be regarded as a sort of companion to Croom's "Minor Gynecological Operations," edited by Dr. McMurtry. It is a carefully written account of the lesions of the vagina and pelvic floor, embodying and representing the best teachings of the present day, though the work is by no means a mere compilation. The author writes with the conviction of experience, and in a pleasing style.

It may be mentioned that in speaking of the prevention of lesions of the vagina and pelvic floor Dr. Hadra says that one of the points in the prevention of them is *asepsis*. "At least asepsis of hands and instruments we should expect of doctors and midwives, and the neglect of such precautions should be considered criminal before every judicial court of our country." From this the reader would at once suspect that the author is in favor of immediate treatment of lesions acquired during parturition, since this is almost a corallary to antiseptic or aseptic midwifery. And on the next page the author says: "The great frequency and importance of lesions in these parts should cause the profession to adopt" the immediate treatment of lesions acquired in parturition. "A moderate percentage of failures should not deprive the woman of the benefit of the doubt."

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES; A Yearly Report of the Progress of General Sanitary Sciences throughout the World. Edited by CHARLES E. SAJOUS, M.D., etc., of Philadelphia, and Seventy Associate Editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Series of 1888. Vols. V. Vol. I, 8vo, pp. xv–541. Philadelphia and London: F. A. Davis, Publisher. 1888.

The first volume of this series opens with a paper on "Diseases of the Brain and Spinal Cord," by Dr. E. C. Seguin, of New York, covering 111 pages. Drs. Charles K. Mills and J. Hendrie Lloyd, of Philadelphia, contribute the paper on "Peripheral Nervous Diseases and General Neuroses," which is illustrated by a map showing the geographical distribution of Beri-beri. Some of the "Diseases of the Heart and Pericardium" are discussed by Dr. A. L. Loomis. Dr. James C. Wilson, in his usual clear style, writes of "Fevers," Dr. Wm. H. Thompson of "Diseases of the Mouth, Stomach, Pancreas and Liver," Dr. W. W. Johnston of "Diseases of the Intestines and Peritoneum," Dr. Joseph Leidy of "Animal Parasites and their Effects," Dr. John Guitéras of "Diseases of the Blood and Spleen, Tuberculosis and Scrofula," Dr. N. S. Davis of "Rheumatism and Gout," Dr. James Tyson of "Diabetes and Diseases of the Suprarenal Capsules," Dr. Francis Delafield of "Diseases of the Kidneys and Bladder," Dr. Tyson of "Urinalysis, Chyluria and Hæmoglobinuria," and Dr. E. C. Spitzka of "Psychological Diseases."

This volume, it is needless to say when we look at the names of the contributors, lacks nothing that could be desired.

Volume II of the series opens with a paper on "Surgery of the Brain and Nerves," by Dr. Senn. Dr. J. Ewing Mears contributes a paper on "Surgery of the Abdomen," and Dr. Charles B. Kelsey one on "Diseases of the Rectum and Anus." Dr. E. L. Keyes writes of the "Surgical Diseases of the Genito-Urinary Apparatus in the Male," Dr. John A. Packard on "Diseases and Injuries of Arteries and Veins," Dr. Lewis A. Stimson on "Fractures, Dislocations, and Sprains," Dr. P. S. Conner of "Amputations, Excisions and Plastic Surgery; Diseases of Bones and Joints," Dr. Hunter McGuire of "Gunshot and Punctured Wounds," Dr. John Guitéras on "Surgical Tuberculosis, Abscess, Carbuncle, etc.," Dr. Arthur Van Harlingen on "Diseases of the Skin," the good colored plates of which have been rather awkwardly folded in. Dr. Morris Longstreth contributes an article on "Tumors," Drs. F. R. Sturgis and A. F. Buechler the paper on "Venereal Diseases," Dr. Christopher Johnston the one on "Surgical Diseases," Dr. Henry M. Lyman the one on "Anæsthetics," and Dr. D. Hayes Agnew the one on "Surgical Diagnosis."

The paper on "Diseases of the Skin" shows the progress being made by dermatologists. The work in this field has been very great within the last two years, especially in the therapeutics of skin diseases.

A MANUAL OF MINOR GYNECOLOGICAL OPERATIONS. By J. HALLIDAY CROOM, M.D., F.R.C.P.E., F.R.C.S.E., etc. First American, from the second Edinburgh Edition. Revised and enlarged by LEWIS S. MCMURTRY, A.M., M.D., etc. With numerous illustrations. 8vo, pp. 228. Philadelphia: Records, McMullin & Co. 1888. Chicago: W. T. Keener.

Surgeons and gynecologists have been so much occupied of late years in writing of the larger gynecological operations that the stepping-stones to gynecology—the minor operations have had but little place in literature. This hiatus in gynecological literature has been filled by this book, from the pens of two men—one in Great Britain, the other in America—both admirably qualified

for the work. Dr. Croom is well-known on this side the Atlantic, both as a writer and an operator, and it does not detract from his reputation to say that the American editor of the work is equally well-known.

The chapters of Part I, Diagnostic, of the book are on; Vaginal examinations, the Rectum, the Bladder, the Speculum, the Sound, Volsella and Tenacula, Dilatation of the Cervix Uteri with Tents, the Aspirator. In Part II, Therapeutics, the chapters are on: the Vulva, Vagina, Urethra and Bladder, Cervical Applications, Intra-uterine Therapeutics. In addition to those Dr. McMurtry has added an Introduction and an excellent chapter on Laparotomy. The book is a safe and complete guide to the performance of minor gynecological operations.

MISCELLANEOUS.

BAD PRESCRIBING AND STILL WORSE DISPENSING.—The writer was recently summoned as a witness in a New York Court, and heard the following case:

A physician gave a patient for colic ¼ of a grain of sulphate of morphine by hypodermic solution in the walls of the abdomen, and gave him a prescription for "Mistura Squibb ℥2" to be taken as directed. The verbal directions given with this were that if, on reaching home, the man's pain was better, he should take none. If about the same, take a teaspoonful; if worse, take two teaspoonfuls. In a few minutes after the man left it, the pharmacist came to the physician's office to ask what "Mistura Spuibb" was, or what was meant by it. The physician gave him the formula for the common compound tincture of opium or diarrhœa mixture. He knew what that was, and went off to dispense it. A short time after he came to the physician again, and said he had made a great mistake by having dispensed the compound solution of opium, a preparation six times stronger than that intended, and containing a proportion of opium equivalent to about 7½ grains of sulphate of morphine to the fluid-ounce.

They at once sent for the patient to come to the pharmacist's store, when they found he had taken two teaspoonfuls of the compound solution of opium, about equivalent to 2 grains of sulphate of morphine, after having had ⅓ of a grain by hypodermic injection. The gravity of the case was at once realized, and very vigorous, proper measures were adopted to counteract the opium; and after two physicians walking and dragging the patient through the streets all night with occasional bowls of strong coffee—keeping near to a large hospital where a battery was in readiness in case the respiration should entirely fail—signs of improvement began. Then in a few hours more the danger was past.

It seems altogether inexcusable for any physician to write such a line as that above quoted and issue it as a prescription, because it really indicates nothing, and means nothing that any pharmacist is bound to know, or can in any way be responsible for not knowing. If physicians, by thoughtless habits abbreviate and curtail their names so that they signify nothing with definiteness or safety—and will use names of persons instead of things, or proper names as indefinite adjectives—they not only discredit themselves, but also their profession, and when they get into the Courts they can expect no mercy.

The pharmacist in this case did exactly what was right, and took the only proper course open to him, when he went to the physician with his nondescript prescription, for an explanation, and the physician then did the best he could do by giving him the formula for it. But, after this, the pharmacist went back and committed the almost criminal blunder of dispensing a solution instead of a tincture, the one six times stronger than the other—with the formula for the weaker one in his hand, and the label of the stronger one on his bottle, with a nearly fatal result.—*Squibb's Ephemeris*, June, 1888.

THE HYGIENIC PROTECTION OF RAILWAY PASSENGERS DURING THE COMING SUMMER.—Dr. Rauch, Secretary of the Illinois State Board of Health, addresses the following circular to the railway managers of Illinois:

The Board directs me to advise you that it is deemed desirable before the advent of warm weather to secure such care of railway stations and grounds, and of railway travel, as may tend to improve the sanitary condition and comfort of passengers generally, and specifically to limit the danger of any epidemic contagious disease.

Although there seems to be no immediate cause for alarm as to Asiatic cholera, the germs of that disease still exist in some parts of Europe whence large numbers of immigrants are constantly arriving in this country; and it now prevails as an epidemic in Chili, Brazil, and probably elsewhere in South America. Until it has died out in the countries with which the United States has direct commercial intercourse, it will not be prudent to relax vigilance, nor to omit proper precautions.

We had a narrow escape last fall from the introduction of this disease, and there is no telling what may happen during the summer.

The cleanly condition of water-closets on cars and at stations, also of privies, and the purity of drinking-water supplies for passengers and employés are matters of the first importance in this connection. At many of the small stations the conditions which obtain in these respects are far from satisfactory. When privies are used they should be kept clean by constant attention. Vaults should be emptied at proper intervals, the contents disposed of so as to prevent further nuisance, and efficient disinfectants should be freely and continually used. Explicit instructions on these points will be furnished by the Board whenever requested.

Interruption of railway travel and traffic may be prevented, and the comfort and welfare of the travelling public will be promoted by good sanitary conditions, and the Board will cheerfully coöperate with you to secure these ends.—*Sanitary News*.

HEALTH IN MICHIGAN IN MAY, 1888.—For the month of May, 1888, compared with the preceding month, the report indicates that consumption and measles increased, and that influenza and neuralgia decreased in prevalence.

Compared with the preceding month, the temperature in the month of May, 1888, was much higher, the absolute humidity much more, the relative humidity about the same, and the day and the night ozone slightly more.

Compared with the average for the month of May in the nine years 1879–1887, measles were more prevalent, and intermittent fever, remittent fever, diphtheria, consumption of lungs, and diarrhœa were less prevalent in May, 1888.

For the month of May, 1888, compared with the average of corresponding months in the nine years, 1879–1887, the temperature was lower, the absolute humidity was less, the relative humidity slightly more, the day and the night ozone were much less.

Including reports from regular observers and others, diphtheria was reported present in Michigan in the month of May, 1888, at twenty-three places, scarlet fever at fifty-four places, typhoid fever at fourteen places, and males at twenty-four places, and small-pox at one place.

Reports from all sources show diphtheria reported at three places more, scarlet fever at eleven places more, typhoid fever at one place less, and measles at nineteen places more in the month of May, 1888, than in the preceding month.

PRIZE STUDIES OF TORNADOES.—The *American Meteorological Journal*, desiring to direct the attention of students to tornadoes, in hopes that valuable results may be obtained, offers the following prizes:

For the best original essay on tornadoes or description of a tornado, $200 will be given.

For the second best $50.

And among those worthy of special mention $50 will be divided.

The essays must be sent to either of the editors, Professor Harrington, Astronomical Observatory, Ann Arbor, Michigan, or A. Lawrence Rotch, Blue Hill Meteorological Observatory, Readville, Mass., U. S. A., before the first day of July, 1889. They must be signed by a *nom de plume*, and be accompanied by a sealed envelope addressed with same *nom de plume*, and enclosing the real name and address of the author. Three independent and capable judges will be selected to award the prizes; and the papers receiving them will be the property of the journal offering the prizes. A circular giving fuller details can be obtained by application to Prof. Harrington.

ASPHALTE PAVEMENTS AND THE PUBLIC HEALTH.—The vapor of tar has been supposed to be beneficial in a number of disorders, but Dr. Edmund J. Mills, of the Glasgow Technical College, has written a short note on the injurious effects of tar vapors so copiously discharged on our streets while asphalte road-mending is going on. It is said that the injurious effects of these fumes is perfectly well known at tar works, where the pitch is always cooled down in a closed chamber prior to casting in blocks. Casual inquiries have convinced him that the operations of road repair in Glasgow have been, during the last three weeks, the cause of a great deal of totally unnecessary illness, the leading symptoms of which are nausea and giddiness. He himself has been three times prostrated in this way, and has been thereby debarred from pursuing his ordinary professional work until these repairs cease. In view of the serious inconvenience from which many more must have suffered, it is to be hoped that the use of pitch in the future may be dispensed with, as the operation of road-mending can, if desired, be conducted without any offence whatever to the public health.—*British Medical Journal*, May 12, 1888.

MEDICAL PRACTICE IN CANADA.—*The Toronto Mail*, of May 19, says:

The Ontario College of Physicians and Surgeons has built a high wall around and about the practice of medicine in this province. Now and then they add another tier, until the struggle to get over the wall is hardly worth the exertion it costs—at least, that is what is being said by many who are anxious to get inside. Occasionally a kicker appears on the scene, shines in full splendor for a brief day, and then is snuffed out in the most unceremonious manner. One of this class illuminated the Police Court yesterday. His name is J. H. Stewart, and he appeared to answer a charge of practicing as a medical man without the necessary sheep's skin. The case went against him, and he was fined $100, with the option of thirty days in goal. His wife, who was also charged with a breach of the Medical Act, was discharged.

MEDICAL SOCIETY OF JAPAN.—In the report of the proceedings of a special meeting of the Sei I Kwai or Medical Society of Japan, held at Tokyo on November 30, 1887, *The Australasian Medical Gazette* says: The first business which occurred was the introduction by the President, Takaki-Kanehiro, F.R.C.S., Eng., of Miss Light, M.D., a recently-elected member of the Society practicing in Tokyo. This election shows a liberal and enlightened spirit we cannot too highly eulogise. Many of our readers may not be aware of the prominent position which is taken by modern European medicine in Japan, we therefore think it not out of place to say that the leading practitioners, who are really numerous, possess diplomas of the highest character, which they obtained after study in Europe, and the papers read at and the reports of the meeting of this society show how highly cultivated these gentlemen are, and how enthusiastically and thoroughly, medicine, surgery, and sanitation are practiced in Japan, which but thirty years since was a sealed country against all European knowledge. The action of the State in these matters is far in advance of that of the Australian Governments, and the reports of the medical department of the Japanese Imperial Navy are almost a lesson to the world.

AN OLD IDEA PATENTED.—Dr. Joel W. Smith, Charles City, Iowa, writes: "The Farny Suture," said to be patented July 13, 1886, in England, France, Austria, etc., consists in the application of adhesive plaster, upon each side of a wound, (wherever skin sutures or adhesive straps have usually been made use of to bring the divided or weakened parts in close apposition, and so as to favor the healing process) with eyelets at the end or side of each plaster nearest the wound, and thus permitting the lacing of the two plasters together.

The writer can testify that it is a valuable substitute in many cases for long plaster strips or skin sutures, after having repeatedly made use of the same thing, and in the earlier years of professional life, beginning 1850. The patent, of course, could not be sustained, but it is well to have it widely advertised.

THE COLLEGE OF STATE MEDICINE was incorporated in London in 1887, and is presided over by Sir Joseph Fayrer. The course of lectures during the summer session will be given in rooms of the Chemical Society, Burlington House. Among the lecturers will be Professors Klein, Fleming, Fayrer, Brudenell Carter, Seely, and Sir Robert Rawlinson. The regular Professor of hygiene and public health is Dr. Wm. Robert Smith. The Public Health Laboratory connected with the College will be open throughout the session, which opened early in May.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 16, 1888, to June 22, 1888.

Col. T. A. McParlin, Surgeon U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Dept. of Platte, June 20, 1888.

Major J. M. Brown, Surgeon, will take charge of the office and duties of the Medical Director, Dept. of the Platte, during temporary absence of Col. McParlin. S. O. 52, Dept. Platte, June 20, 1888.

First Lieut. Chas. M. Gandy, Asst. Surgeon, granted leave of absence for three months, to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

Capt. Wm. O. Owen, Jr., Asst. Surgeon, ordered to Ft. Leavenworth, Kan., for duty. S. O. 148, A. G. O., June 27, 1888.

Major A. A. Woodhull, Surgeon, granted leave of absence for three months, to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

First Lieut. J. D. Poindexter, Asst. Surgeon, granted leave of absence for one month. S. O. 55, Dept. of Dak., June 18, 1888.

Capt. Marshall W. Wood, Asst. Surgeon, ordered to Ft. Randall, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

Capt. Wm. C. Shannon, Asst. Surgeon, ordered to Ft. Meade, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

Capt. Geo. McCreery, Asst. Surgeon, ordered to Ft. Warren, Mass., for duty. S. O. 147, A. G. O., June 26, 1888.

So much of par. 3, S. O. 142, A. G. O., June 20, 1888, as relates to Capts. Geo. H. Torney and Geo. McCreery, Asst. Surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.